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THE BOSTON
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ORIGINAL ARTICLES

THE DIAGNOSIS OF CLINICAL HILUM TUBERCULOSIS*

BY JOHN B. HAWES, 2ND, M.D.

IN any consideration of this subject I would emphasize the importance of distinguishing between pathological and clinical hilum tuberculosis. In my opinion, the pathological variations of the process are of comparatively little or no interest as compared with the clinical manifestations of this condition. These are of paramount importance. I am going to take up certain diagnostic points, first, those relating to the history of the child, second, symptoms, third, physical signs, and last X-ray evidence in diagnosis.

HISTORY

(1) *Exposure.*

If exposure can be definitely demonstrated, I consider that a history of exposure to tuberculosis is of very great importance in diagnosis and treatment. Note that I said *definitely demonstrated,*—I think this is important. I believe it may be safely assumed that a child who has been really exposed to tuberculosis whether human or bovine has something wrong with it and that his physician should do something about it. That "something," however, varies according to circumstances but in no case should it mean needlessly alarming the parents; it does mean common sense and careful medical supervision and advice.

(2) *Frequent coughs and colds.*

If a child gives a history of frequent coughs and colds it should be investigated. Many textbooks and many writers emphasize the importance of frequent coughs and colds as suggesting a tuberculosis background. I am inclined to doubt this and feel that instead it suggests bad tonsils and adenoids.

(3) *Whooping cough and measles.*

These have often been connected in a doctor's mind with tuberculosis. I always ask if the child has had either whooping cough or measles but I also ask what is a much more vital question,—as to whether or not either condition was accompanied by any complication or followed by a period of debility or of being "run down" or a cough. That, in my opinion, is the important point of these two conditions.

(4) *"A delicate child."*

I always ask parents to put their child in one of three classes: Was your child strong and robust? Of the thin and wiry type? Or was he delicate? Parents without any hesitation almost always at once classify their child as belonging to one of these three groups. If the mother puts her child in the last class further questions should follow. It does not necessarily mean that the child has tuberculosis, however.

(5) *Glands in the neck or elsewhere.*

If there is a history of enlarged cervical glands it is well to consider the possibility that there may be similar enlarged glands at the root of the lung and that these may be of a tuberculous nature.

SYMPTOMS

(1) *"Ease of tire," "Always tired," "Fatigue."*

I have put these first as I consider them of most importance. It is essential to inquire into them. The average normal child will rarely admit that he is tired and all such information must usually be obtained from the mother. The most striking point in a case which I recently diagnosed as a positive one in a young boy of 12 was that he admitted when coming from a private school to his home in the suburbs that he was tired and wanted to go to bed immediately after his supper. This is a very important point. I know of nothing that is more apt to cause such undue fatigue as a tuberculous toxemia.

(2) *Changes in temperament.*

When a usually bright and cheerful child becomes cross, irritable and petulant, there is something wrong. He may need the "oil of gladness that grows on the Castor bush" but he

*Read at a meeting of the Trudeau Society of Boston, December 8, 1925.

may also be suffering from a tuberculosis somewhere in his body. Look for it.

(3) *Cough and sputum.*

Cough and sputum and other symptoms related to the lungs are rare, sputum excessively so. Occasionally, a child has a dry, paroxysmal, almost brassy cough which may suggest whooping cough. If present, it should of course be carefully investigated. Please note that I merely say that it should be investigated.

(4) *Sweats, Pain in the chest, etc.*

These are rare and not of particular significance.

(5) *Fever.*

Fever in children, in my opinion, is of interest but not of great significance as diagnostic point of hilum tuberculosis nor on the other hand absence of fever does not disprove a positive diagnosis.

(6) *Rapid pulse.*

The same remarks hold true to this as to fever.

(7) *Loss of weight, Underweight, Malnutrition.*

These are much discussed and in my opinion much abused points. I can readily see the necessity of having some fixed standard in doing wholesale examinations as is being done at present by the state in its 10-year program. I believe the state picks out as possible suspects all those who are 10 per cent. or more underweight. But what constitutes *underweight* and what constitutes *malnutrition?* I agree that of a million children a very large proportion of boys of a certain age will weigh a certain amount and similarly so with girls. But we doctors are not dealing with children in the millions but with one at a time. I frankly admit that I have no use for those elaborate tables that tell me that at the age of 15 years my boy should weigh 110 or 115 lbs. or more. As a matter of fact, he weighs just over 100 lbs. and is as beautifully built and as healthy as I could wish. Some day soon I hope he will start to grow. I depend on my own common sense, on my own powers of observation, on sizing up the parents, etc., in deciding whether or not a given child is underweight or really suffering from malnutrition. In other words, in making that most difficult of diagnoses—hilum tuberculosis—we must individualize in every case and not depend on any set standard. In the presence of real underweight and of real malnutrition hilum tuberculosis must be considered as a possible cause.

SIGNS IN THE EXAMINATION OF THE CHEST

In the first place I wish to state my very frank opinion that I consider the chest examination the least important of our diagnostic procedures. I naturally always examine the child's chest using two kinds of stethoscopes with various whispered 1—2—3's, etc. but only rarely do I get any valuable information. I try to look as intelligent as I can during the process but profit little as far as the diagnosis is concerned. I believe that other doctors who are really honest with themselves will agree with me in this.

(1) *Parasternal dullness.*

This is of no significance or importance.

(2) *Paravertebral or Interscapular dullness.*

The same is true of this, only I would add "in my hands and in my opinion," these are of no significance or importance.

(3) *d'Espine's sign.*

This is of interest but of no value.

(4) *Eustace-Smith sign.*

Hardly of interest and certainly of no value.

(5) *Muscular rigidity.*

This is of absolutely no significance to me.

(6) *Dullness elsewhere, Changes in voice and breath sounds.*

These are of little or no value in hilum tuberculosis.

(7) *Enlarged chest veins.*

This is an interesting point but is usually present only in advanced cases when the diagnosis is already too clear.

(8) *All other chest signs.*

Valueless.

X-RAY IN DIAGNOSIS

This is my "credo" as to the value of X-ray in the diagnosis of hilum tuberculosis:

I believe that the X-ray is an aid to diagnosis but never in itself nor by itself should it be used to diagnose hilum tuberculosis.

I do not believe that the X-ray can distinguish between abnormal root shadows that are causing symptoms and equally abnormal shadows that are not causing symptoms.

I do not believe that X-ray can differentiate hilum shadows due to non-tuberculous infections from those due to tuberculosis except of course when there are calcified glands.

I have seen no evidence to make me believe that the X-ray men have settled on any standard by means of which they can differentiate the normal from the abnormal root shadows.

On the other hand, I have every reason to believe that each X-ray man differs from his fellow roentgenologist and is a law, or rather, an opinion unto himself as far as this question is concerned.

I believe that as a general rule practitioners accept X-ray evidence and the dictum of the

X-ray man far too readily and do not use their common sense and powers of observation enough.

Such are my opinions on the subject of hilum tuberculosis briefly stated. But I admit that I, and I believe the rest of us, are still in the student stage as to this diagnosis. Therefore, my ideas are subject to change as I grow older and I hope wiser. They are based, however, not on a few cases but on a large number of children seen in dispensary, preventorium and private practice. The subject is an important and fascinating one. You will note that I have made no mention of a Von Pirquet tuberculin reaction. My reason for this omission is that if it were positive I might still make a negative diagnosis of hilum tuberculosis and if negative in the presence of other conditions I should not hesitate to make a positive one.

Out of this apparent chaos of diagnostic procedure and what you might call destructive criticism, what then is there on which we may build our diagnosis and come to an approximately fair and true conclusion? There are many instances where a positive diagnosis one way or the other is impossible and where we must simply play safe and build up the child in every way even if the diagnosis is not clear. The following, however, is of help to me and summarizes what I have said:

FOR A POSITIVE DIAGNOSIS

1. Exposure.
2. *Real* malnutrition and *real* underweight.
3. Ease of tire. Being tired all the time.
4. Temperamental changes.

Of Importance but not Essential to a Diagnosis

5. A positive Von Pirquet.
6. X-ray evidence of marked hilum changes.

FOR A NEGATIVE DIAGNOSIS

1. Presence of tonsils, adenoids, etc. that can account for symptoms.
2. Apparent but not real underweight.
3. Negative Von Pirquet repeated in absence of factors that would tend to make it negative.
4. Absence of ease of tire and fatigue.

Of Value but not Essential in Making a Diagnosis

5. Negative X-ray evidence.

* * * *

DISCUSSION

DR. HENRY D. CHADWICK: I expected to find some things with which I could disagree but I cannot find a thing. At the same time I am rather glad that Dr. Hawes so well agrees with the things which I have found to be the truth in regard to this problem. There are a few things which I would like to mention and which I would like to elaborate, especially what he has said in regard to exposure. I believe that this is a very important thing to find in regard to a child under examination,—under consideration, I should say—but we must go a little farther in the history obtained from the child and parent because we've got to keep in mind the fact that the parents may have tuberculosis of which they are unaware. On the examination of a large number of high school students one physician found some cases of tuberculosis in which there was a negative family history but not being content with that he investigated the parents, brothers and sisters and in several instances found chronic fibroid tuberculosis in the family of which no one had any knowledge. Therefore, when we claim there is a negative family history we cannot always be sure that there is no exposure at home.

Now in regard to malnutrition, in our state clinic work our standard is 10 per cent. under weight. Now I know that this is arbitrary but I realize that the problem is so large we have to have a dividing line somewhere and when I speak of 10 per cent. underweight, I do not mean that exactly as the child can be 10 per cent. underweight and yet not suffering from malnutrition. On the other hand, there are children of normal weight who are suffering from malnutrition because many children are under height and according to the tables a child may be average weight and still have marked malnutrition. You know, in our state clinic work we take those who are 10 per cent. underweight and contact cases and those other children whom teachers think require examination, so by taking in these cases we get at those other cases of malnutrition who may be said to be average weight.

In regard to physical examination, I feel that the stethoscope is of no use except to discover other conditions than tuberculosis. It does not help one in diagnosing bronchial gland tuberculosis. If we find râles we may be certain they are due to some other condition than pulmonary tuberculosis except in rare cases.

In regard to percussion, I really feel that it is a personal thing. I think some of us get more dependent on auscultation and some more dependent on percussion. I feel that a light percussion is of value in demonstrating interscapular dullness. I do not think parasternal dullness is of any importance but we may find it. I feel that I can demonstrate interscapular dullness and muscular spasm. Percussion is a sense of touch rather than sound and has to be light.

In regard to the tuberculin test, in our state clinic work we do the Von Pirquet test because we can get more consent to giving the Von Pirquet test than the intradermal test. One test, if positive, indicates infection; it does not indicate the location of infection or disease. You

may get positive tuberculin test as a result of tuberculous bronchial glands or mesenteric glands. It should not influence one in locating the disease in the bronchial glands unless one finds X-ray evidence as to real disease located there. Three tests are necessary before infection can be eliminated. It is a test which if positive tends to confirm the opinion you form from the result of symptoms and the X-ray examination.

Now, in regard to symptoms, I would agree entirely with Dr. Hawes in regard to the arrangement. I would add that a poor appetite is a very common thing with these children. They are not hungry for breakfast and they do not care to eat, they pick at their food, and I think that is very common with these children who have tuberculosis. Ease of tire is the outstanding thing which I find in our cases.

Dr. George W. Holmes: I am sorry to disappoint Dr. Hawes but I am going to agree with what he says. It is unfortunate that I cannot find something to disagree about. I think his first statement is a very important one. This is a clinical question, not an X-ray or a pathological one. I do not think there is as much difference among roentgenologists as he thinks. I think this is the only point on which he and I disagree. The physician urges the roentgenologist to make statements he does not wish to make, he is not satisfied with the statement the roentgenologist has made. X-ray men are obliging people and try to do it and go beyond what they ought to do. When we find an X-ray on such a matter we get down to whether or not the glands are present and we can say something about the character of them. We can say that they show calcification, for instance. Although we believe that there was a tuberculous infection at some time, in the great majority of cases we cannot give that evidence. In a great number of cases we can show some infection, some mottling around the hilus which would suggest that the infection has spread, yet we cannot say what that infection is. Enlarged glands can come from any infection—Hodgkin's disease, in adults in dusty occupations,—and we see them in chronic heart disease, but without clinical symptoms one cannot be justified in making this diagnosis because glands are present and some of them show calcification. We have had a fair opportunity to check up physical examinations against X-ray plates as to the presence or absence of glands and I think the X-ray plates are a fairly good means of checking up.

I agree with Dr. Hawes that there does not seem to be any accuracy at all in the presence or absence of signs. Cases sent down to us with this diagnosis show no evidence of enlarged glands and other cases sent down in whom we have no reason to suspect them show them. In the great majority of cases we cannot say whether they are present or not. In the majority of cases the history is probably what helps the physician most. Of course this is true in any chest condition. The history and appearance of the patient is much more important than the X-ray findings. I feel rather apologetic in taking up your time as I have not looked up the subject and can only give you my observations. I agree with all that has been said. There is not much for me to discuss.

Dr. Frank Hunt: There are just one or two points in his history and symptoms that I think we do not realize sufficiently. Now take the question of exposure. Exposure may be and often is an important factor but statistics in New York show that just as many children are admitted with tuberculosis who give no history of exposure as those who are admitted giving this family history. We can say very readily that they were exposed from other causes. We see time and time again children with no evidence of disease who have been living in practically the same room for years, 3, 4, 5 and 6, very healthy and fat children whose father or mother died in the room in which they were practically living. It seems to me a very curious thing and I have tried somewhat an analyze just what happens when an additional factor comes in on these cases such as family exposure accompanied by malnutrition. If these children are not fit I think you are going to have tuberculosis. It is a constant wonder to me, however, and to many mothers and fathers that those children exposed to tuberculosis grow up just as healthy as the non-exposed child.

I cannot find any fault with Dr. Hawes's paper in general. I certainly agree with him about physical signs. I have been perfectly up in the air about them. I have not been able to diagnose bronchial glands from physical signs and X-ray the same way. I look at these things differently from Dr. Hawes because he sees them from the diagnostic standpoint; I see them from the treatment standpoint alone and over a period of a good many years I have noticed that as far as treatment is concerned there is no trouble about that. A child comes in with nothing else but enlarged glands from the X-ray standpoint and various signs,—the Eustace-Smith sign, d'Espine's sign, etc. There is no trouble about their treatment. They all get well. When I say all, I mean, say 99 per cent. of them. I feel that it is absolutely true that we are diagnosing bronchial gland tuberculosis as long as we make that distinction between bronchial gland infection and disease. The average bronchial gland tuberculosis diagnosed today is not more than an infection. Of course, Dr. Chadwick may be able to find interscapular dullness. I feel that it is of no use to most of us at least. It may be in his

hands, as he says. I am very willing to acknowledge that Dr. Chadwick is thoroughly sincere. I cannot do it and so many of the men I see cannot do it that I almost feel it is useless in the hands of the profession at large.

DR. RALPH D. LEONARD: I must confess this is more like a Methodist love feast and for the sake of having some argument I'd like to ask Dr. Hawes why he calls this hilum tuberculosis. Why isn't it hilum disease? Why tuberculosis? How many of his cases has he seen and followed along as tuberculosis? Hilum tuberculosis from an X-ray point of view in the adult is extremely rare. Jacques who has had considerable experience from the X-ray point of view has only found 12 cases in his experience. Now in viewing a child's chest we should be a little careful in pinning this diagnosis of tuberculosis on certain changes which we may find around the roots of the lung. What is the definition of hilum tuberculosis? Is it glandular infection with the tubercle bacilli? We will assume perhaps that that is what it is, —tuberculosis in children of the glandular type. The old question still hangs on that I have asked for 14 years anyway,—what is the hilum shadow? I have not found any answer to it. As soon as a child is born it is open to infection and these glands immediately start their normal function of filtering and taking care of infection. Immediately there are inflammatory changes, so actually the normal hilus does not exist. Therefore, if these glands are normally enlarged who is going to say when they are pathologically enlarged? Let us assume that in a given case we agree that in this child the glands are a little more enlarged than the average child of that age should be. Who can say what is the cause of that enlargement? Tuberculosis is only one of a dozen germs which may produce this infection. Chronic sinus disease, chronic throat trouble, the innumerable and acute diseases of childhood, measles and whooping cough,—all will produce glandular enlargement. Is enlargement due to the tubercle bacilli any different from any other infection? We used to hope that it was. We used to hope that the tuberculous glands had something that was pathognomonic. I do not believe that calcification is pathognomonic of tuberculosis. I wish it were but I do not think pathologists would say so. There may be some here tonight to back it up. If we claim that it is an infection getting into the lung producing shadows which can be differentiated from the calcification following disease, therefore, if we can tell whether the hilum glands are enlarged or not,—pathologically enlarged,—can we tell the cause of the enlarement? There is no pathognomonic sign of tuberculous changes on which anyone can presume to make an X-ray diagnosis of hilum tuberculosis. I think we can say in some instances hilum glandular disease or abnormality associated with the changes in the hilum which many X-ray men agree is the so-called peribronchial changes,—peribronchial tuberculosis, so-called. The bronchial shadows are composed presumably of the bronchial tube itself, what secretion may be within it, the peribronchial vessels and the peribronchial lymphatics. Enlargement of peribronchial glands produces a more or less localized congestion which produces the so-called peribronchial thickening on the X-ray film. I think pathologists will back us up when we say peribronchial infiltration. Peribronchial tuberculosis does not exist. These bronchial shadows, thickening of the bronchi with thickening of the lungs, are associated with lymphatic changes. This does not represent disease in itself and certainly does not represent tuberculous infection. If we can make a diagnosis of hilum tuberculosis from the X-ray I feel that the converse proposition is probably true,—that the X-ray is of no use to the clinician in making his diagnosis. You can put plates showing identically the same thing, as I will in a few minutes, with a diagnosis positive in one and negative in the other, all depending on the clinical story of the clinician. If the X-ray is of no more value than that, of what use is it? It is of some use, however, in that it excludes other things, for instance, real tuberculosis of the lungs.

(Showing of X-ray films.)

I think the X-ray is of value in showing to some extent the degree of glandular enlargement but this is still a matter of personal opinion and as far as establishing the diagnosis of hilum tuberculosis is concerned, I do not think the X-ray can do it alone by any means and it is questionable whether it has not been the means of pinning that diagnosis on many innocent children.

DR. STUART: I would like to ask about the tuberculin test. Would it make a positive diagnosis of tuberculosis if there is a reaction? Also, I would like to ask if Dr. Hawes believes that a Von Pirquet test should be used. I have been under the impression that it should be used but I have found it an unreliable test and if used creates a false impression of safety. Most of the children's clinics have already given it up. One point I would like to make and this may be an important one,—not to make a positive diagnosis of hilum tuberculosis but to get suspicious cases of hilum tuberculosis under treatment, and not giving suspicious cases the benefit of the doubt. In children's clinics we all too frequently see children who have been given the benefit of the doubt and have gone on their way rejoicing only to come in later with active symptoms. When in doubt the important thing is to give them treatment. I agree with what Dr. Hawes says about the value of a Von Pirquet test.

DR. OTIS: When a definite diagnosis of tuberculosis is made, according to law, it should be reported . . . . Several years ago when we first obtained our tuberculin we were surprised at the number of negative cases we obtained. We then received our tuberculin from the Saranac laboratory and had better results. I had a communication telling me that a doctor was surprised at how few cases responded to the Von Pirquet test and I wrote advising him to change his tuberculin and make sure that he was getting a reliable tuberculin.

DR. HAWES (closing discussion): I agree with Dr. Chadwick in what he said about exposure. In children of the type coming to our preventorium exposure to tuberculosis should be taken for granted. No one said anything about exposure to milk. I suppose it does enter into it. Dr. Chadwick must be on a par with Dr. Frederick C. Shattuck who knew more about the gentle art of percussion than anyone else I know. Likewise, there is no doubt in my mind but that Dr. Frank Pottenger of California can tell a great deal of what is going on inside the chest by simply feeling the muscles over the chest. Most of us cannot do it. Most of this work, however, is to be done by the general practitioner to whom percussion is of little or no value. Dr. Hunt made the same valuable suggestion that a history of exposure, if admitted, is of value, otherwise not. Dr. Leonard asked why I called this paper "hilum tuberculosis." I did so because Dr. Floyd asked me to. I think in many cases we have simply hitched a name on to a condition. A common sense scepticism is very much needed but yet when I recall those X-rays just shown I feel that there certainly is a condition which we must call "hilum tuberculosis." I think that is one use of the X-ray. Another is its psychological value. Oftentimes you find it difficult to persuade a parent to do the right thing for his child. If you can show him the X-ray, however, and point out what you believe is wrong there, even if he does not know a calcified gland from a hole in the ground, you can impress him with the fact that there is something radically wrong.

My statements in the beginning as to the value of discussion have been justified. My paper amounts to very little but the discussion of it has amounted to a great deal and has pleased me very much indeed.

INFANTILE OTITIS MEDIA*

BY DANA W. DRURY, M.D., F.A.C.S.

A SERIOUS impairment of hearing in adult years is a most afflicting condition embittering the whole life of a patient. In the infant it is equivalent to deafness, for the child learns to talk by imitating what it hears and if it does not plainly understand the speech of those around it, consequently taking no interest in what is going on, there is no impulse to induce an attempt to speak.

The occurrence of otitis media in infancy is principally favored by the anatomical conditions of the infantile auditory duct. The tympanic cavity of infants contains abundant mucous tissue and plenty of fluid in the first few weeks of life. Both are excellent culture media for invading bacteria. The edematous tissue is subject to very rapid purulent transformation, and, as there are vast accumulations of it in the upper tympanic cavity, epitympanic suppurations in infants and young children are of frequent occurrence and by no means devoid of danger. During the same period the middle ear spaces are not freely permeable. The epitympanum and the upper part of the mesotympanum are infiltrated with connective tissue bridges and mucosal septa. Thus it comes to pass that with the onset of an infection a large number of disseminated small inflammatory foci are partly in inter-communication and partly isolated and segregated by the mucosal septa. Under these circumstances there is very little chance, once purulent transformation has begun, for early and convenient escape of pus. It is only after fluidification of the entire mucous tissue of the middle ear and formation of a true empyema of the tympanic cavity that spontaneous drainage can be hoped for. Up to that time extensive swelling and deep ulcerations of the middle ear mucosa will develop.

The eustachian tube of this period of life is remarkably short and wide, and the muscles are feebly developed. Nor can it be definitely denied that in some cases the eustachian tube is not completely closed at birth. It is through all these conditions that infection of the infantile middle ear from the pharynx is particularly favored. Also, it may easily happen that pharyngeal mucus, aspirated fluid, etc., may enter the tympanic cavity of infants by deglutition and vomiting. In many cases otitis may occur from the fact that the penetrated mucus is at the same time the carrier of the infection. In other cases, the mucus entering into the middle ear spaces may act as a foreign body, causing as such, an inflammation, which is changed into ulceration by secondary infection from the pharynx. Indeed, many authors look upon infantile otitis as an affection due to the entrance of foreign bodies.

Suppuration is further favored by the fact that debilitated infants, who are particularly

*Contributions from The Evans Memorial, No.—120—A.—67.

liable to infection, suffer from impaired respiration and deglutition, and that in tender and anaemic children accumulation of mucus with food particles in the naso-pharynx cannot be avoided.

One of the principal causes of the frequent occurrence of middle ear inflammation in infants and young children is the frequency of faucial and tubal affections. Furthermore, the recumbent position of nurslings is to be taken into account, as it favors irritation of the tube —and consequently the middle ear—in disturbed deglutition or respiration. The micro-organisms which are always present in the naso-pharyngeal tract, but which cannot cause purulent inflammations in a healthy child, may lead to suppurative decomposition of the mucous tissue of the tympanic cavity, always an easy prey to infection and purulent transformation. This explains, also, according to some aurists, why, in autopsies on infants from the new born up to one year, suppurative exudates are often found in the tympanic cavity. Further, it shows reason why the histological examination of these cases admits of distinct demonstration of acute inflammatory foci in the mucous tissue accumulated both at the fundus of the tympanic cavity and in the attic.

The following illustrative cases are reported in some detail, together with a discussion of the important items connected with them:

Case I. For the first two weeks a premature baby, weighing four pounds was fed at regular intervals through the nose without apparent difficulty. On the late afternoon feeding, the babe developed crying, and resistant to the catheter. The crying became more marked and from both sides of the nose presented a watery discharge. Examination of the ears showed more injection in the right canal and at the drum than was noticeable in the left. With the use of an adrenalin plug the right canal did not blanch as rapidly as the left. The right side of the head seemed to be more sensitive than the left. A moist alcohol wick was placed in the right canal and the auricle mopped over with alcohol and without an anesthetic the right drum was punctured, emitting a serous exudate. A dry wick was placed into the deeper portion of the canal and a sterile pad over the ear. The wick was changed as often as it became saturated. The discharge lasted two days when the babe seemed to be quite well again.

Discussion—Otitis is not infrequent in infants a few weeks old, while in well nourished vigorous older babies it is, with few exceptions, a secondary infection. On the other hand, in poorly nourished athreptic infants it may occur without any other evidence of illness. In quite young babies an otoscopic examination may show a dull, whitish appearance of the drum membrane, which on superficial examination of the case might be ignored. In all cases particularly at this age, when the drum membrane landmarks are indistinct, a wipe should be brushed over the surface, thus removing the epithelial scales which may have lodged there with the result that perhaps a congested, bulging membrane may be revealed. The otitis media of infants is, in a majority of cases, produced by the invasion of the micro-organisms through the tube. It is seldom occasioned by infection through the blood channels. The embryonic character of the mucosa, which still exists during the first weeks of life, may be regarded as a predisposing cause for the frequent diseased condition of the mucous membrane of the middle ear. In a premature babe the drum membrane is almost horizontal, there being no osseous meatus, the eustachian tube being shorter, wider and more horizontal than in older children. The drum heals most readily. In numerous cases treated by early puncture, the drum is found absolutely normal in appearance within a few days to two weeks after the discharge has ceased.

Case II. A seven months old male child, having been bright and smiling during the day and retaining all of its regular feedings, at bedtime seemed less happy, while the body was quite warm. Several times during the night it coughed and was distinctly more restless than usual. In the morning the cough was more marked with distinct nasal watery discharge. Temperature 104°F. per rectum. During the day the child had several loose colorless movements, while the abdomen remained very tense. If the baby was not disturbed it slept, but on touching the child it cried out, especially when the head was moved. When the ears were examined the child resisted from pain rather than from fear, but both drum membranes seemed quite white and not bulging. The temperature remained around 104°F. The ears were examined the next day and as both drums were bulging they were incised. The straw-colored fluid evacuated was cultured and the same organism that was found in the stools was found in the ear discharge. The child recovered in two weeks.

Discussion—The frequency of middle ear affections decreases steadily with the advancing age of childhood, but as they grow older they are still more prone to this affection than are adults. Among all the diseases of infants none is probably so frequently overlooked as otitis. Aids in establishing diagnosis are the conditions of the membrane, such as hyperaemia at the handle of the malleus and at the periphery, radiating injection of the vessels, cloudiness and yellow discoloration, and finally bulging of the central portion, sudden restlessness, constant crying, tremor of the lower jaw, when unilateral, the patient becoming quiet when laid on the affected side, and perhaps extending its hand to the affected side, while the pain seems

to be in paroxysms, and generally increasing during the night. The cause is probably due to the restlessness of the baby; it first burrows its head into the pillow, then suddenly changing its position, it exposes the warm ear to the cold air with the result of a fresh paroxsym. Regardless of the age or condition a bulging drum membrane in presence of fever calls for incision. No harm is done to the ear by the free incision properly made, while much harm as the result of chronic otitis media and mastoid disease may occur when the incision is delayed. The drum membrane should be incised from below upwards and into the meatal wall. Pus may not be evident at first, but is established in two or three days. Often times the incision made in the drum will heal over by clot formation unless the ear is gently syringed within a few minutes. Cases often show great tendency to frequent relapse, and when this does happen the main cause will be found in the naso-pharynx.

Case III. Mary C., eleven months old. When six months of age she had measles since which time both ears have constantly discharged. The skin of both canals was red and the right canal excoriated. Behind the right ear the skin was broken with red moist edges. The discharge was thin, was offensive and from the right ear seemed to have in its content small whitish particles. The right drum was destroyed except at the edges with boggy, granulation tissue over the promontory, while the left drum had two distinct perforations, one at the periphery at the bottom of the drum, exposing the middle ear granulations. The other open perforation was in the upper portion of the drum above the short process of the malleus. The weight was twenty percent below normal, while the skin and conjunctivae are pale and white. The child was distinctly apathetic, the tonsils were prominent and the cervical glands on both sides of the neck enlarged, the left rather tender on palpation. The treatment was local and general—Cleanliness and powder as local medication, rest, food and sunshine as general treatment.

Discussion—The symptoms of purulent otitis which develops at the crisis of an acute infectious disease are hidden by the symptoms of the general disease and the aural affection is thus sometimes overlooked. Sometimes before perforation takes place minute examination of the drum membrane is impossible due to the swelling of the canal and the maceration of the skin in the depths of the canal. Without doubt, a thick discharge often resists syringing and necessitates careful cleansing with cotton wipes. Also, syringing too much and over too long a time causes the persistence of the discharge, some of the water being retained and acting as a poultice. In many cases of acute otitis, and probably in all cases of chronic otitis showing prolonged discharge the antrum is involved. If immediately after drying the canal there is a free discharge into the canal, this affords proof that the antrum is involved, as the middle ear could not form pus so rapidly. There is no doubt that the otitis of infants has an important influence on the general nourishment of the system. Also, the eruption of the teeth bears a distinct relation to an otitis. The teeth may be the cause for the primary infection (through the swelling of the gums and increased saliva), or may be the cause of the persistence of the discharge from the ears. Undoubtedly they are also the cause of relapses in certain infants.

Case IV. A six months old female child had a free pus discharge from the right ear for several weeks following a severe head cold. About the right ear the skin was red and weeping while the outer canal was thickened, red and sore on cleansing the canal. At the top of the ear there was a sizeable area of scaling with an underground of thickened, red dermis. Otherwise the child was quite normal. The treatment consisted of cleansing the right canal, following by very careful drying, both of the canal and about the auricle—no water was allowed to be in contact with the back of the ear. Dry powder was dusted over the skin surface and a thin film blown into the ear canal. The fingers were restrained so that, either when the child was asleep or awake, it could not scratch the ear. Not responding well to treatment the skin tests to foods were tried.

Discussion—Without doubt certain cases of otitis heal spontaneously. Then again, we not infrequently see non-reactive otitis due to disease of other organs and run their course without symptom. In infants infection may take place from the external meatus, also brought about by the entrance of water into the external auditory canal while bathing, or in attacks of coughing during whooping cough, and vomiting must often be looked upon as a cause. In infants, boils in the canal are extremely uncommon, and when they do occur the infection invariably comes from the area about the ear by means of the finger nails of the child. Fever is not particularly characteristic, but generally present. The charactertistics, if any, are morning drop and evening rise. The otitis may develop from an acute process localized elsewhere, the ear involvement being suspected because of a persistent elevation of temperature. Exudations in the middle ear of infants are observed in cachexia, broncho-pneumonia, bronchitis, chronic intestinal catarrhs, and in the course of acute and chronic infectious diseases, eczema and influenza. In a persistent discharging ear, or in an ear that frequently relapses, the naso-pharynx should be examined and if adenoids are present they should be removed. I believe that the removal of the adenoids at the time of incision of the drum membrane is good treat-

ment and a safe procedure. Though we must remember that in a crying infant the normal drum is red, considering the frequency of otitis in infants, mastoiditis is not a common complication. In the case above quoted where the skin is involved and does not respond to treatment allergy should be strongly suspected. This case was sensitive to orange juice.

CASE V. John W., a six months old babe, fourteen days before the present sickness had an acute ear, the drum of the ear having been incised. The first discharge was serous, but in about forty-eight hours became creamy pus. This condition lasted for eleven days and on the twelfth day the discharge practically stopped although the treatment had been the same and no apparent reason was noted. On the morning of the thirteenth day of illness the ear became more tender, practically no discharge from the canal, but the opening in the drum plainly seen without increased bulging of the membrane. The babe did not seem different physically except there was a rise of temperature to 103°F. During that night the ear was distinctly red in back and the next day displayed a beginning tumor back of the ear replacing the auricular fold. This condition on the sixteenth day became a distinct abscess with a tense red skin covering it extending from the top of the auricle to the edge of the sterno-mastoid muscle. The child displayed twitchings about the mouth and cheek on the right side and the temperature had decreased to 100°F. Following a post-aural abscess operation with exposure of the antrum, the petro-squamosal suture was found to be open which would account for the cortical irritation seen by the face twitchings. The wound healed kindly without complications in less than three weeks time.

Discussion—A continuation of fever after free opening and free discharge from the middle ear is a distinct sign of involvement of the mastoid cells. A flattening out to a sagging posterior canal wall is the best single diagnostic sign of activity in the mastoid and demands operative interference. But this point should not be used until the condition of the canal wall is compared with the well ear, as what may appear to be a prolapsed canal wall may be only an anatomical condition and would be seen in the opposite side always. There are cases reported in which the mastoid is primarily involved, others in which there is a primary infection which takes in both the mastoid and the middle ear at the same time. To have mastoid disease does necessarily mean that the middle ear must be primarily involved. In infants the head symptoms often reach a marked degree of severity before perforation of the drum membrane takes place. The infection which arises with high fever, vomiting, unconsciousness and convulsions, presents the picture of a meningeal affection or an acute exanthemata beginning with brain symptoms. Perhaps there is less likelihood of head complications and more of a tendency toward the formation of a sizeable external abscess back of the ear. It has seemed perhaps wiser to wait before operating on these cases, for a day or so to give the infective process an opportunity to become walled off. I think there is less likelihood of a stormy convalescence. The stopping of discharge from the ear and a beginning post-aural swelling cannot be controlled by repeated lancing of the drum, due to the fact that the antrum and attic are walled off and the middle ear per se is now out of the picture, so to speak. The bacillus Pneumococcus is liable to cause rapid infiltration and to cause meningitis as a complication, while the Streptococcus Hemolyticus and the Bacillus Capsulatus are very serious and rather favor involvement of the sinus. Cleanliness and not drugs is most important in treating suppuration of the ears. Generally, plain sterile wickings for a serous, and warm irrigations for a pus discharge are safe procedures. If irrigations are instituted the canal should be dried and a film of a non-irritating powder blown over the drum surface is suggested. In a small number of cases spontaneous rupture takes place. The discharge lasts from ten to thirty days following the opening (rather longer than if the drum is incised, due to the fact that the rupture means a pressure necrosis and a tear, while in an incised drum the edges will approximate very kindly). Disease of the ear is strikingly local, and while the practitioner might watch the skin, bowel, food and ventilation, yet most of the treatment is distinctly local. It is especially important when we use remedies to allay pain that we look frequently at the drums to be sure that pus is not present.

CONCLUSION

1. Meconium may be the infective material in premature infants.

2. Ether is not necessary in infants for removal of adenoid tissue or for the incision of the drum membrane.

3. The importance of early incision of the drum, especially in the infectious diseases, is emphasized.

NEW ENGLAND SURGICAL SOCIETY

INTERCOSTAL DRAINAGE IN THE TREATMENT OF EMPYEMA*

BY D. C. PATTERSON, M.D., F.A.C.S.

THE records of the cases which I will report are from my service at the Bridgeport Hospital from 1922 to 1925, during which time I have employed intercostal drainage in the treatment of acute empyema.

From 1920 up to 1922 I resected a piece of rib and drained into a water trap. During this time there were eleven cases with two deaths, a mortality of approximately 19%. I will not discuss these cases, as my paper has to do with intercostal drainage. I mention them as they represent an average mortality of Rib resection.

When first undertaking intercostal drainage,

NO. 1. Shows drainage tube with soft rubber valve.

my idea was to temporarily relieve the very sick patients and get them in shape for rib resection, as I doubted that they could be treated efficiently unless that was done. However, the improvement was so marked after intercostal drainage, and the recoveries so satisfactory, that in only one case have I done a secondary rib resection. In that case, the patient's condition had been greatly improved by treatment and he made a good recovery following the second operation.

I apologize for coming before you with so few cases to report. There are only twenty-one but the results have been so pleasing and the patients have been so comfortable during treatment, that I would like to see the method given a more general serious trial.

Of these twenty-one cases, only one died. This does not properly belong to the group I am reporting, as he was drained with the ordinary tube without the valve before 1922. In 1921 a boy aged six years came to the hospital following a pneumonia. He was in a very bad condition, with a temperature of 103, pulse 150 and respirations 48. He had a nephritis and a myocarditis. The culture from aspiration showed a sterptococcus infection and the X-ray showed an encapsulated empyema.

He was operated on February 13th and improved immediately. By March 4th drainage

NO. 2. Drainage tube and valve in operation.

had ceased, the tube was out and his temperature remained normal.

On March 10th, while apparently in good condition, he suddenly became cyanotic and died in twenty minutes.

Autopsy showed a thickened pleura, but no exudate. The lung was moist and the heart dilated. A thrombus undoubtedly caused death.

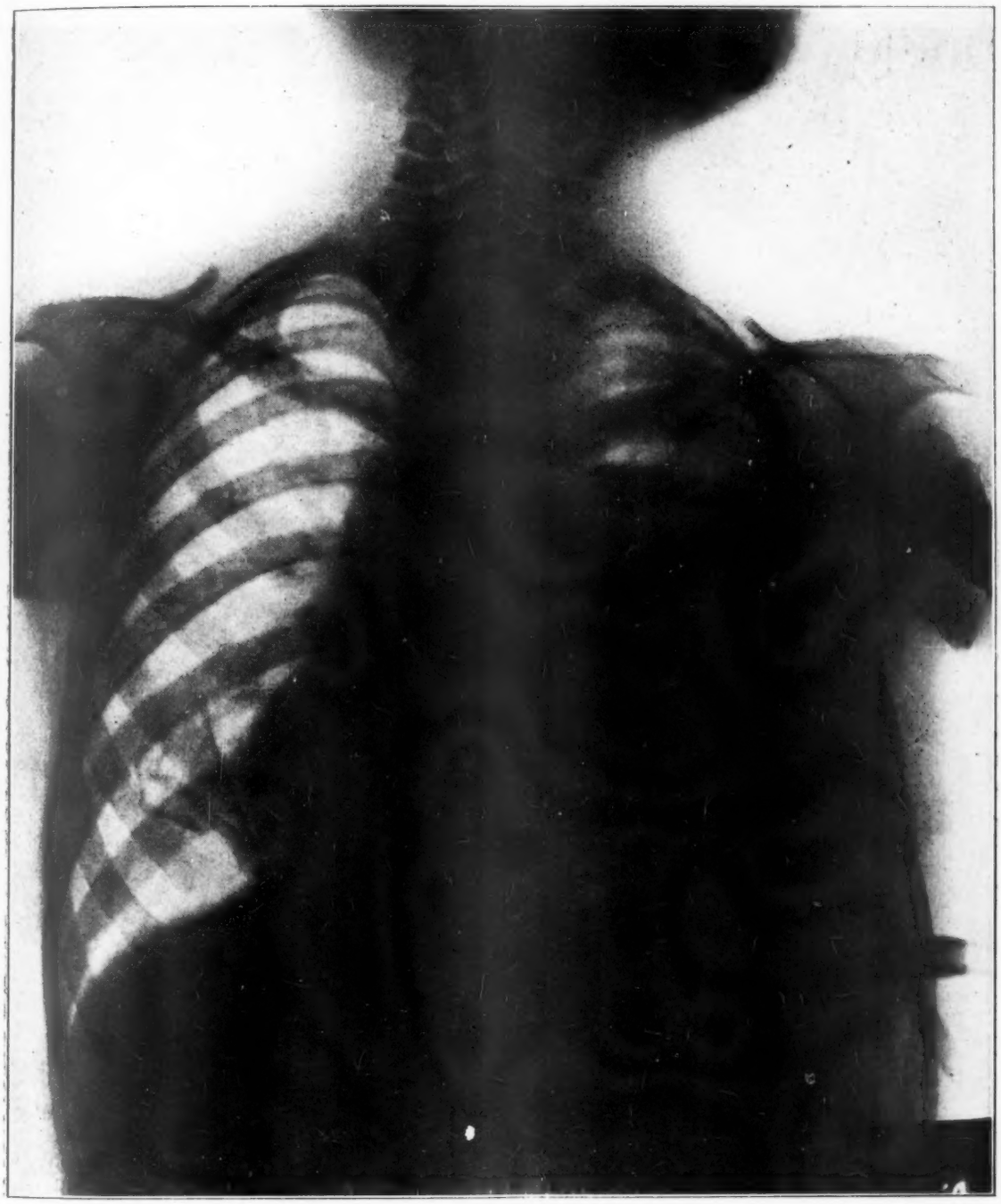
The other cases all made good recoveries and a later follow up revealed that none had any further trouble.

The ages ranged from 11 months to 40 years.

*Read before the New England Surgical Society at Springfield, October 2, 1925.

Eight were under five years and six between five and ten, four between ten and twenty, two between thirty and forty, and one over 40. They were the usual run of empyemas, all following pneumonia, most of them being extremely sick.

practical difference. The average length of time in the hospital was twenty-eight days. The pneumococci cases were a little slower in clearing up. The shortest case was nine days, an encapsulated pneumococcus, and the longest seventy-



CASE R. M. July 2, 1925. Picture No. 1 shows drainage tube in empyema cavity.

The majority of cultures showed a Type I pneumococcus, some staphlococci and some non-hemolytic streptococci. The ratio was about two pneumococci to one of the other types.

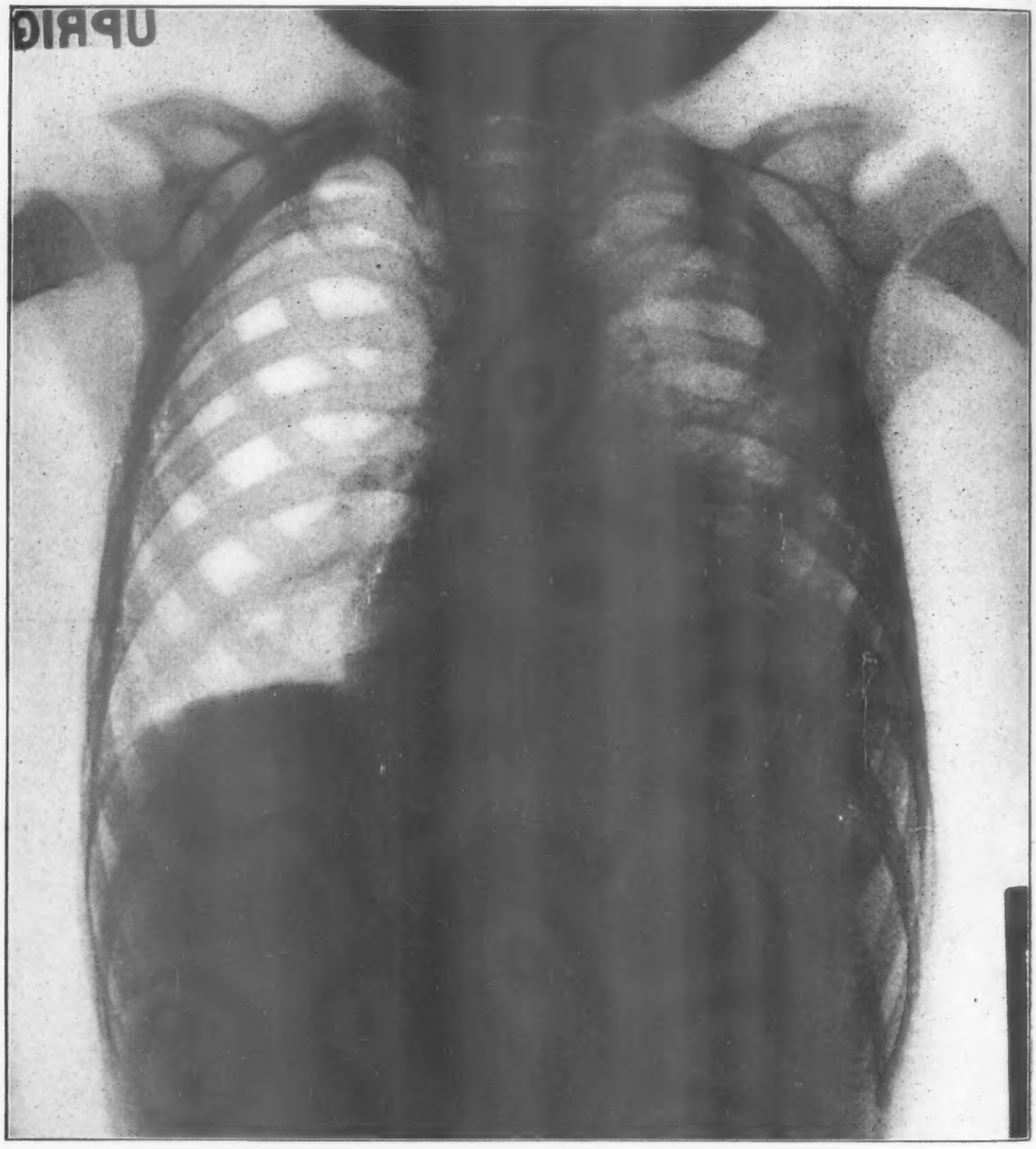
The technique followed was the same in both types, and the post operative course showed no

one days, a pneumococcus case, the one in which a secondary rib resection was done.

There were two cases in which I had to remove pieces of tubing from the chest cavity. In one case the accident happened in the hospital and in another, the child was brought to us

after the tube, about four inches long, had been in the chest over a week. Fortunately, I was able to remove the tubes through an intercostal incision and both patients made a rapid recovery, the stay in the hospital being twenty-five and twenty-three days respectively.

serted. I have four trocars and canulas varying in size from 3/16 to 6/16 of an inch. A tight fitting rubber tube with one eye cut on the side is inserted as soon as the trocar is removed, a suture of silk worm gut closes the skin tightly about the tube and the ends of this suture are



CASE R. M. July 12, 1925. Picture No. 2, ten days later. Chest clear except for thickened pleura.

We have carried out our treatment as follows: As soon as the aspirating needle shows real pus, drainage is done. The patient is placed in a semi-sitting position and made as comfortable as possible. Local anaesthesia, 1% Novocaine, has been used exclusively in all cases, children are given a lolly-pop which they seem to appreciate. A small puncture is made through the skin at the chosen site, and the trocar and canula is in-

tied around the tube. The pus is allowed to escape very slowly when the patient exhales, thus preventing any sucking in of air. As soon as the patient shows any distress, such as coughing, the tube is clamped.

A drainage valve is then put on the end of the tube. This is a small rubber affair which allows pus to escape, but collapses at the least suction. A serviceable valve can be made by cutting two

small slits in a glove finger and fastening it with a rubber band, care being taken not to constrict the tube. I find that this arrangement works very well. The tube is further secured by adhesive straps and a bulky gauze dressing is applied. Soiled dressings can be changed as often as necessary without disturbing the tube.

After twenty-four or forty-eight hours, irrigation with Dakin's Solution is carried out once a day. These irrigations cause no discomfort. Care is of course exercised to prevent any sucking in of air.

After the first week, this is not so important as the lung has commenced to expand and adhesions of the pleura are forming. I have found the cavity to grow noticeably smaller day by day. Sometimes the exudate is not entirely liquified by the Dakin's Solution. This is noticeable after a week. It is then safe to remove the tube and the thick stringy matter will escape through the drainage opening. The tube can then be replaced for further treatment until the discharge has ceased and the cavity obliterated.

CASE S. F. Picture No. 1—February 22, 1925—shows pneumonic process right middle lobe.

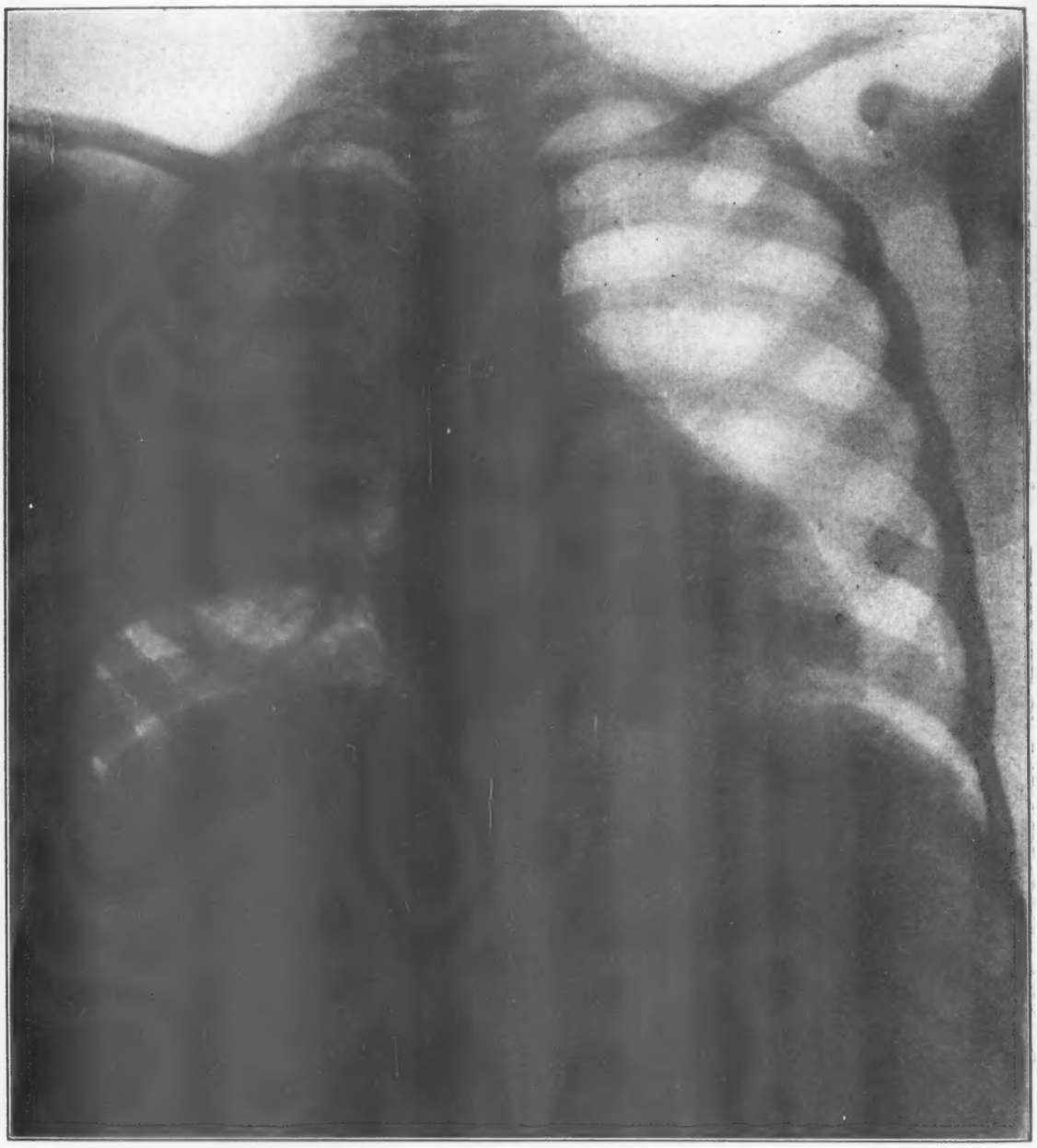
The patients are given blow bottles or balloons within two or three days after operation, and I believe these lung exercises play an important part in the treatment. Suction can also be applied during irrigation.

In the meantime, the patient's general health

is built up by all possible means. Cod Liver Oil is generally given and the patients are placed where they can have fresh air and sunshine. As there are no long connecting drainage tubes and bottles, they are easily moved and their stay in bed is much shortened.

Discussion

Dr. Alfred M. Rowley, Hartford: Dr. Patterson is to be congratulated on the success of his work in these cases. He is upsetting precedents, but to adversely criticise him, one might as well criticise a man who makes a grand slam at bridge, he took all the tricks.



CASE S. F., No. 2, taken March 4, 1925. Picture No. 2 shows encapsulated empyema right chest.

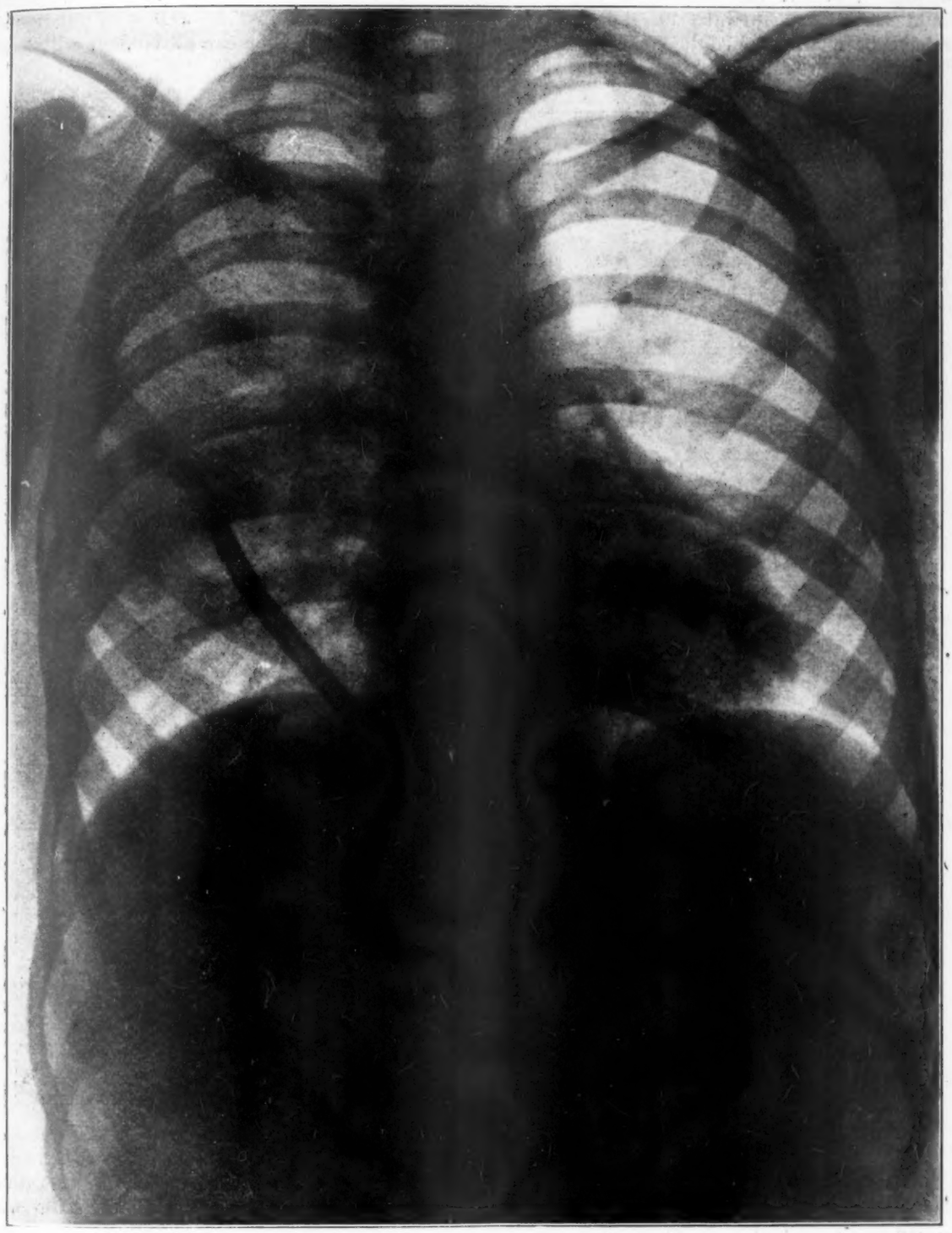
I realize, of course, how few cases these are from which to draw conclusions, but I was moved to report them principally because of the comfortable post operative period they had and the rapidity with which they improved.

I consider the use of local anaesthesia, the practical absence of shock from the operation, and the careful after treatment the principal features of this work.

I cannot discuss his method from any operative experience with it, as I have not employed it. I have, however, operated upon cases which have previously had intercostal tubal drainage.

Our method in doing a thoracotomy is, to use a good size tube after the resection of one or more ribs, to put a piece of rubber dam over

that, covered with vaseline, so that it will adhere to the skin, and then to place the drainage tube into a water bottle.



CASE S. F. Picture No. 3—March 9, 1925—shows empyema cavity completely clear. Drainage tube removed following day.

The doctor's valve is ingenious, and if it will drain and keep pressure in the chest, it is an excellent thing. In empyema as in other conditions we must decide when, where and how to operate, the elective time, the place, and the method of procedure. I think it was demonstrated during the flu, that a streptococcic empyema is better treated by being aspirated and the thoracotomy delayed, but that has been so instilled into the medical minds, that they often delay the pneumococcic cases, which I believe should have an early thoracotomy.

Where to drain is an important thing. We

know that a small drainage opening at the bottom of a cavity is better than a large window at the top. The doctor has favorably placed his opening. I believe the position of the opening should be farther forward on the chest than we have been accustomed to make it.

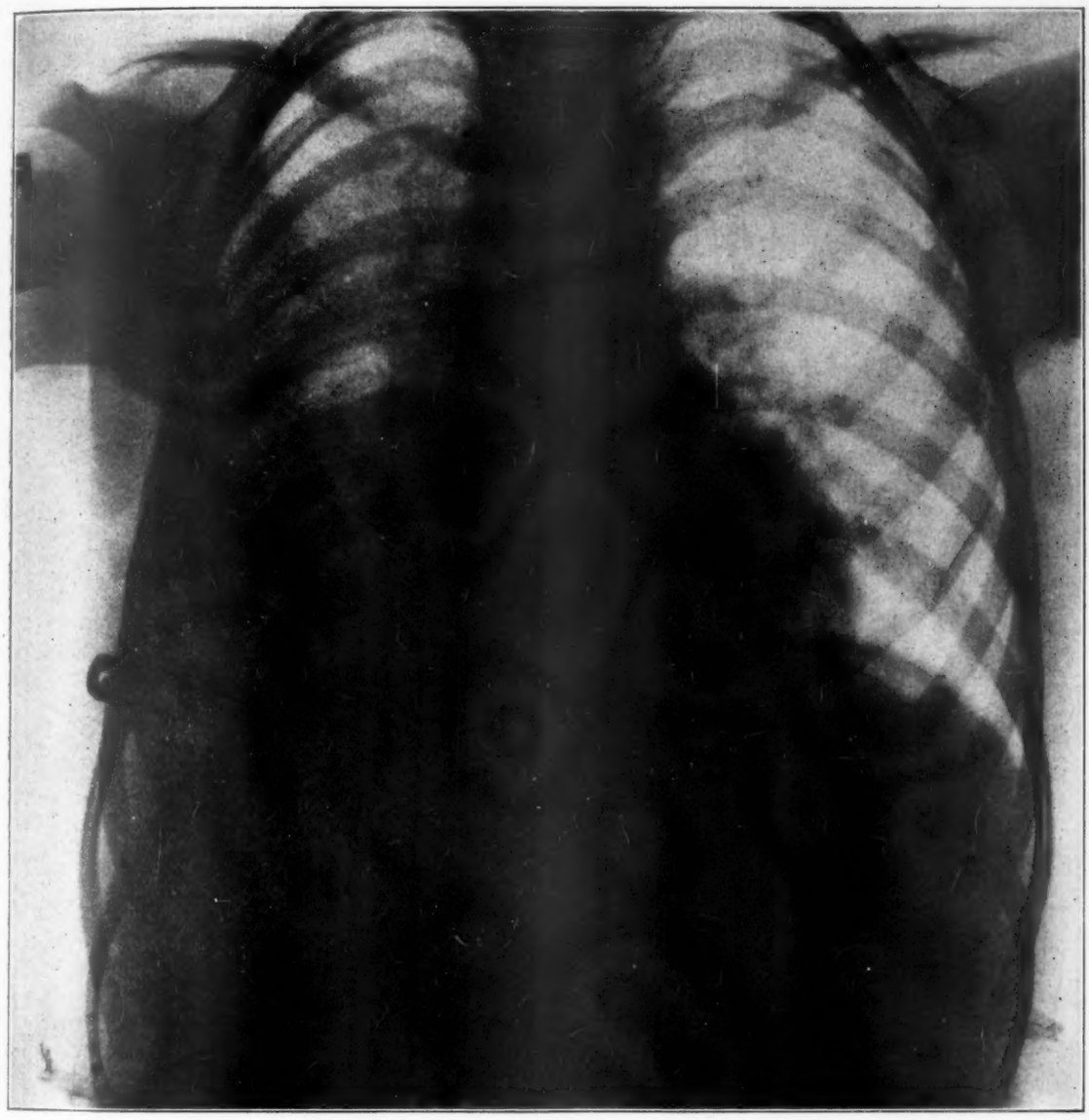
If anything was demonstrated during the war it was the efficacy of Dakin's solution for empyema, and I believe much of Dr. Patterson's success is due to it. One must be sure that they haven't a bronchial fistula before using it, but having demonstrated that, the influence of Dakin's solution is wonderful.

Dr. Walter C. Seelye, Worcester: I heartily agree with Dr. Patterson's method as I came about this method very largely as he did by doing intercostal thoracotomies in place of rib resection. I found that they got along so well that I didn't need to do rib resections. I feel that rib resections are too often done when the case may recover just as well with intercostal thoracotomy, and they can all be done with local anaesthesia.

CASE W. A. January 3, 1925. Picture No. 1 shows drainage tube above fluid level, and kinking of tube at site of eye, two reasons for poor drainage.

Also in emphasizing the matter of irrigations I feel it is very important to test them out with great caution at first because some cases do have the opening into the trachea, and you are likely to partially drown the patient. I saw one case where a great deal of fluid was pumped in too fast at the outset and the patient had a difficult time with a coughing spasm to free the lungs from the fluid which filled them.

DR. JOHN W. KEEFE, Providence: I am heartily in accord with Dr. Patterson in his treatment of empyema. The method with the exception of the trocar I think isn't new because in my very earliest days in the hospital as an interne we did not resect the ribs for empyema except in a very few instances. It seems to me a great



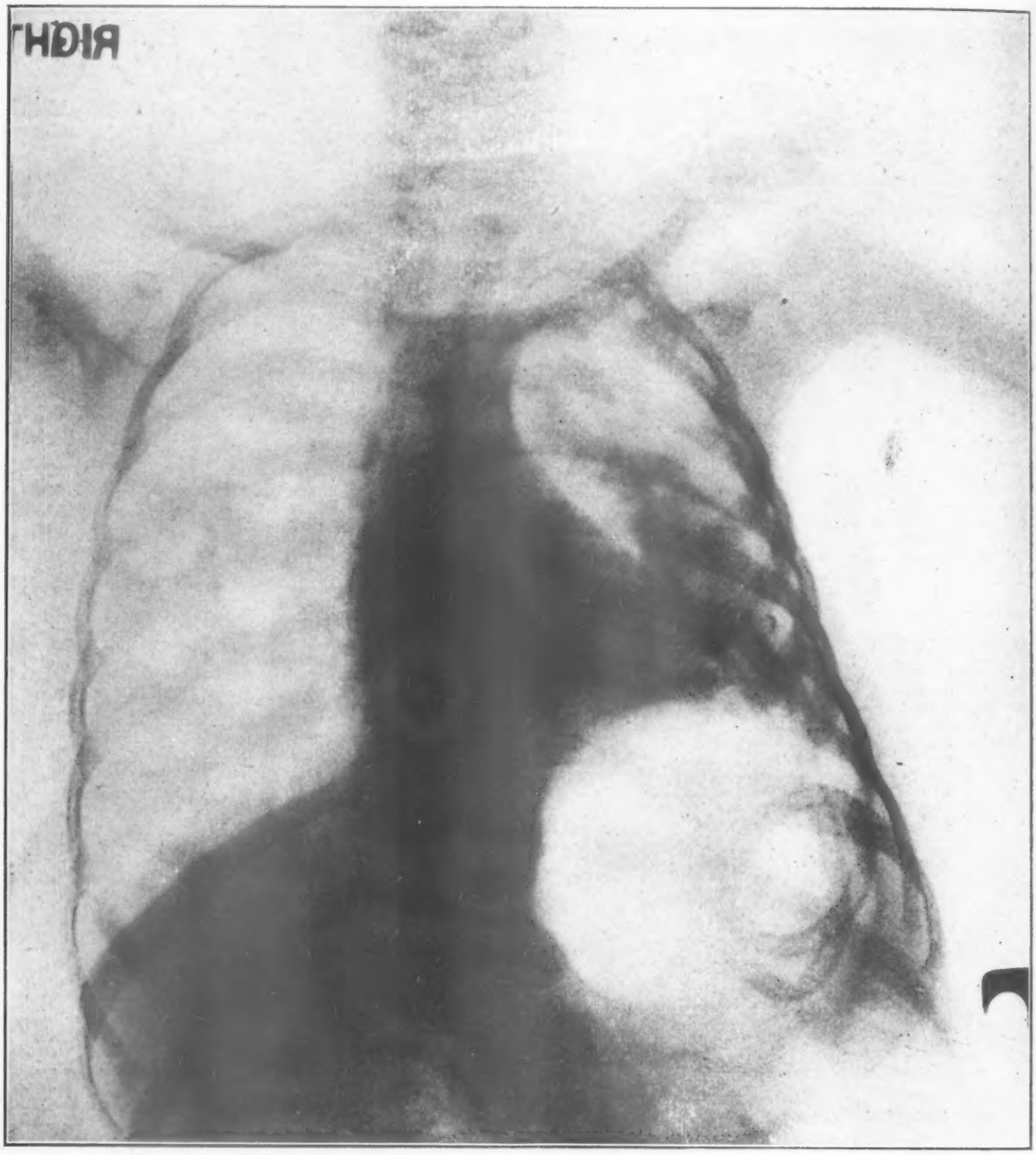
CASE W. A. January 20, 1925. Picture No. 2 shows marked improvement with expansion of lung.

many times we continue a tradition in a hospital, and we all know how anxious we were to perform an operation that looked formidable. When I resected a rib, I thought I accomplished something worth while, but I saw that there was a good deal of shock attended with resection of a rib.

During my early practice in Providence a doctor asked me to be present at an operation for empyema on a young woman twenty-four years of age. He was going to give ether. When I said "Why not use cocaine?" the doctor said "nothing to it." So the doctor gave ether and the woman stopped breathing and became cyanotic, and he tried artificial respiration and then proceeded with the ether again, and resected the rib. As he had an important case to attend he left the patient with the anaesthetist and another doctor; and soon after we left the house the patient was dead. That patient impressed me with the fact that ether is bad and resection of ribs is also bad. So for some 35 years past I haven't resected a rib except in a few instances. I know that just an incision between the ribs and the introduction of a tube will cure the patient and even if you do have air in the pleural cavity, it isn't often that we find it the cause of disturbance.

I had one patient who had a tonsillectomy

performed, and she developed a septic pneumonia. The X-ray plates showed that she had septic areas in various parts of the lung. She expectorated a pint to a pint and a half of fetid pus in 24 hours. She also had an empyema. I was asked to see her and I made a resection between the ribs, using novocaine in one-half per cent. strength. Dr. Bottomley saw the case in consultation with me and he said "I am glad you have got this case and not I," "but you will have to resect a rib." I thought I had an experience of more years than he had; so I continued to drain, and the patient made a recovery. I think it makes very little difference whether you wash out the pleural cavity with Dakin's or don't wash it out. Dr. Patterson has emphasized some sound surgical principles.



CASE E. B. Picture No. 1 shows left-sided empyema, with drainage tube in situ. There is temporary deformity due to condition, and compensatory emphysema of right lung.

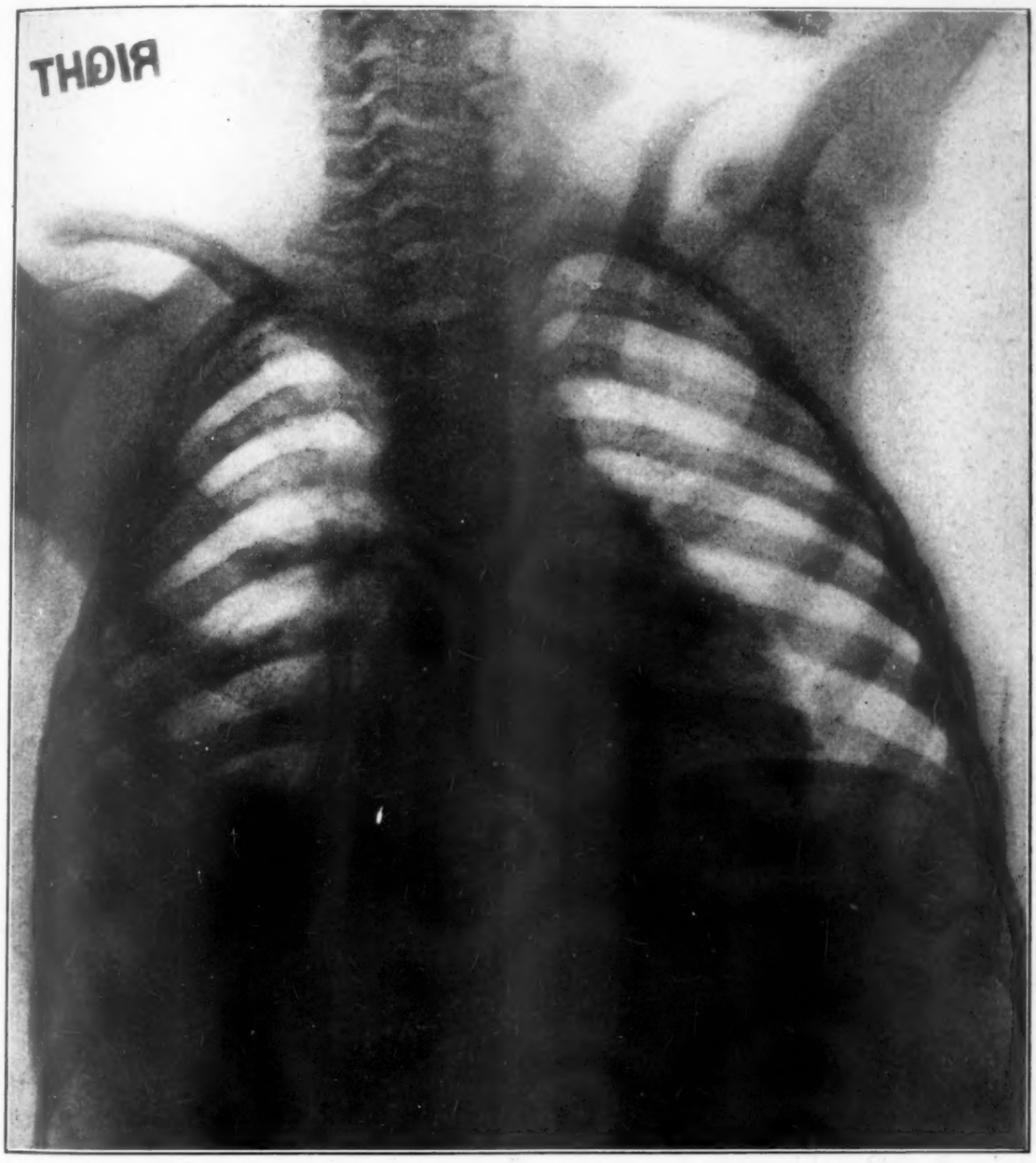
Dr. Edward R. Lampson, Hartford: I have felt for a long time that our standard method of treating empyema was unsatisfactory. At the time the various articles were published after the war, of the so-called closed methods I tried most of them, but, I must confess, with but little success due to the fact that I had not sufficient familiarity with their particular technique. I

do feel that this closed method if it can be worked, as Dr. Patterson has said, is the one we should employ.

I looked up our mortality at the Hartford Hospital in our empyema cases and found that there had been 79 cases operated upon during the past 2½ years with a mortality of 16%. As you know, the mortality depends greatly upon the virulence of the particular epidemic with which we may be dealing and also the germ that we may have to deal with, the streptococcic infection being much more virulent than the pneumococcic or mixed infection.

I am going home with the intention of trying this method advocated by Dr. Patterson in the future as often as possible.

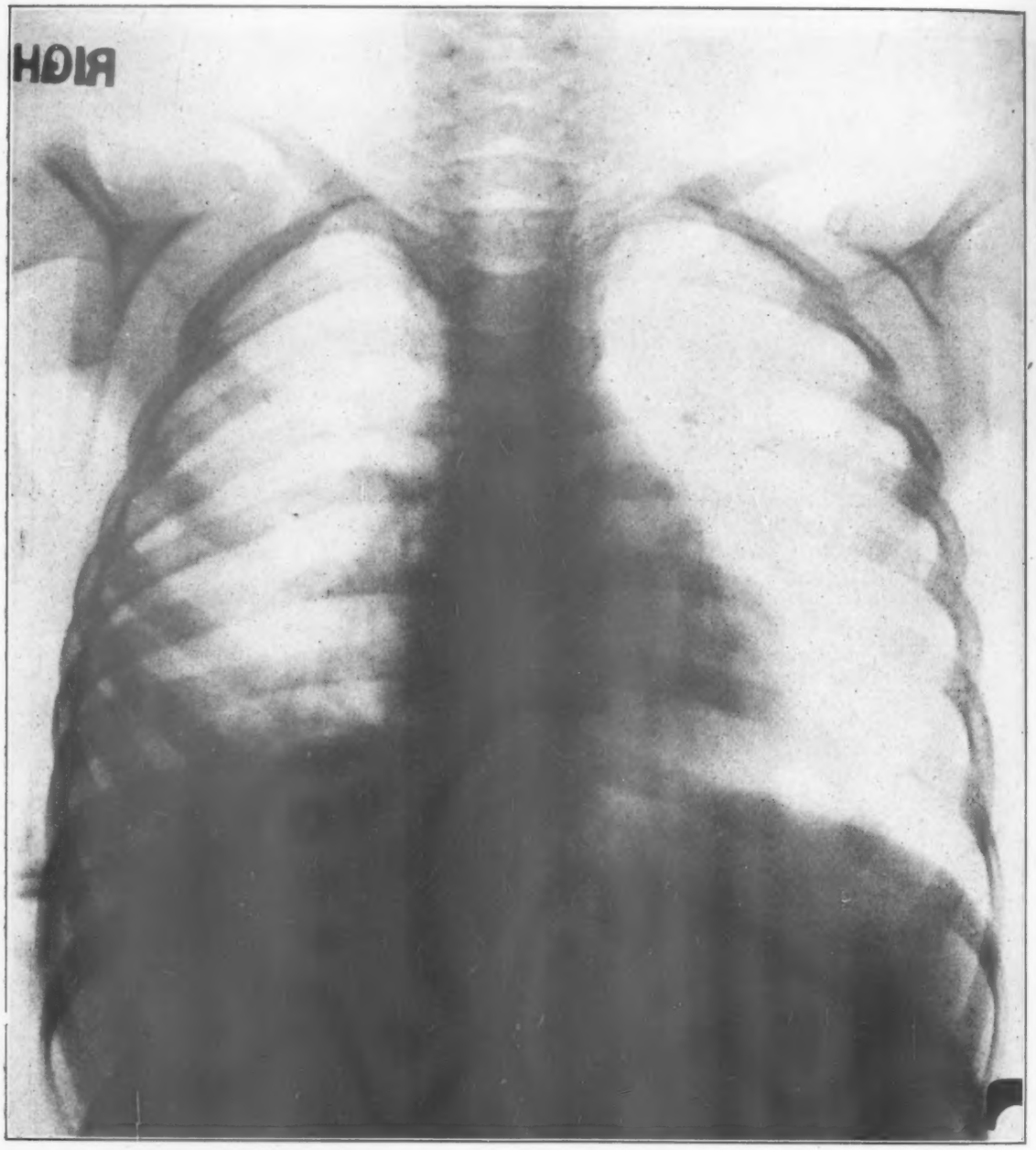
Dr. Thomas W. Luce, Portsmouth, N. H.: I want to show a little device that I saw used at the Flower Hospital last fall, and which we have used with a great deal of satisfaction in Portsmouth. (Showing device and explaining method of using.)



CASE R. E. Picture No. 1 shows piece of tube lost in chest with empyema present.

Dr. P. E. Truesdale, Fall River: It seems to me that the wave in favor of conservative treatment is growing stronger and stronger. One very important thing to know is where the minor operation leaves off and where a radical oper-

ation begins. I think it would be a mistake to use this method in every case. I believe it is a mistake not to use it at all. In dealing with an abscess cavity we all aim to get an adequate drainage, and you can't get adequate drainage through a stem pipe in all cases. I do not mean that it wouldn't act perfectly well in many cases, but where there are collections of fibrin which require an opening large enough to admit the thumb to effect their escape, this method is not adequate. It may not be necessary to have them pass out of the pleural cavity and evacuation of the thin pus may be all that is necessary. However, when a rib or two is resected rapidly under light anaesthesia evacuation of the pleuritic effusion is prompt and the lung is thus permitted to expand before the formation of adhesions which would act to restrict the capacity of the lung.



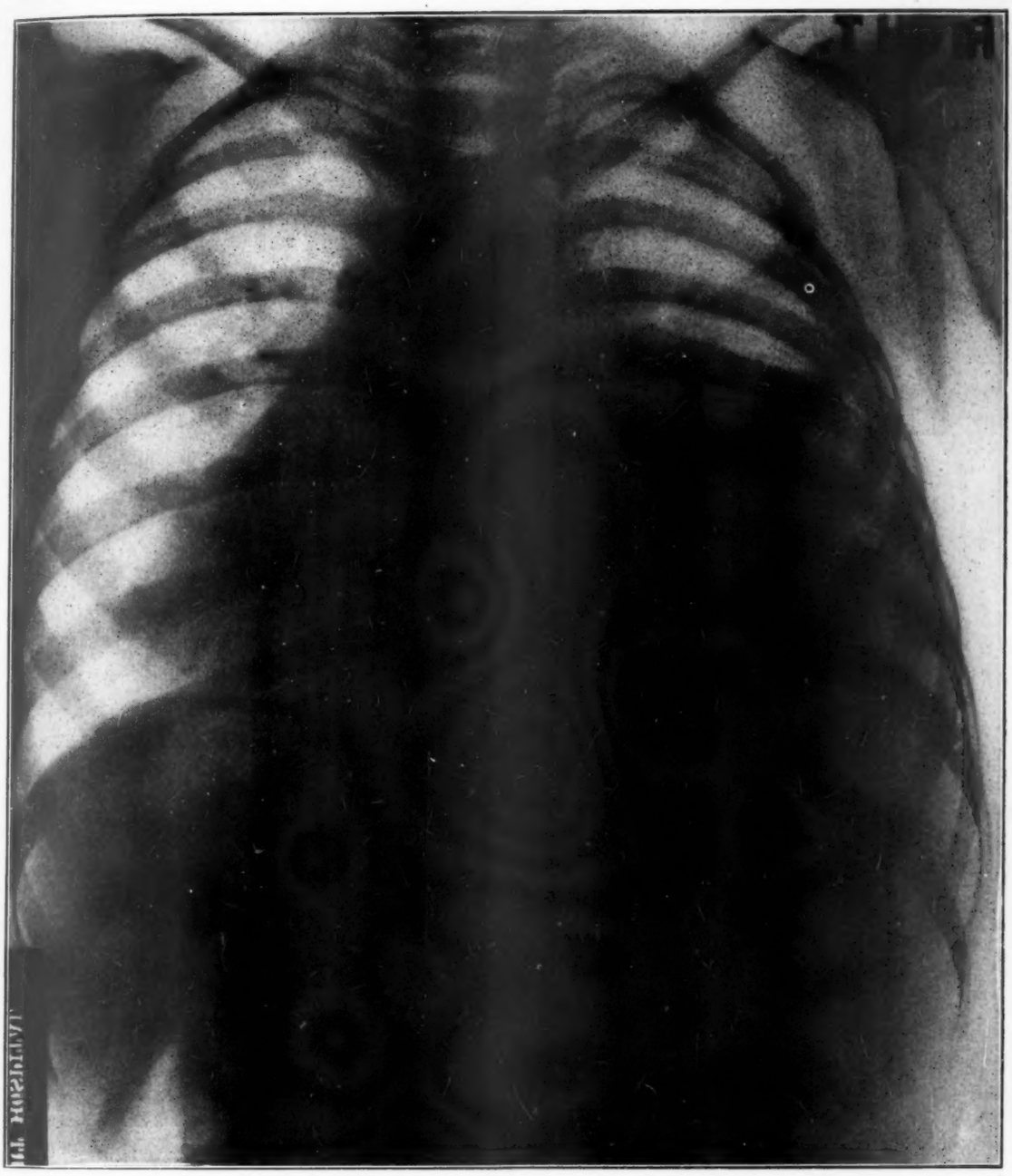
CASE R. E. March 1, 1924. Picture No. 2. Tube has been removed through intercostal incision and empyema cavity drained.

DR. DAVID W. PARKER, Manchester: I would like to report a series of 17 consecutive cases of Empyema in children that were treated by the closed method. Cultures were taken in all of these cases; some of them were due to Staphylococcus, the rest to Pneumococcus. In this series there was one death in a child that had been neglected, and was desperately ill upon entrance to the hospital. Death occurred in this case

about two hours after the chest was drained. One other case was taken from the hospital against advice on the 15th day, and could not be followed further.

The other fifteen are perfectly well, with clear chests and expanded lungs, as shown by the X-ray. The routine technique was the introduction of a 22 Fr. Catheter between the ribs in the posterior axillary line. The catheter was sealed in with rubber dam and adhesive plaster and connected with a large bottle on the floor. This bottle was half filled with water, which made a water seal.

These cases were all operated under local anaesthesia, 1% Novocaine, with no discomfort. The aftercare, which I believe is of utmost importance, consisted in washing the chest cavity with Chlorazine, 1%, every hour after the first day. This solution was introduced through the catheter with a 30 c.c. syringe, then withdrawn. Never more than 60 c.c. was introduced at one time. Care was always taken to see that the return flow was free. Dr. Truesdale speaks of the old cases when fibrin is present. We found that Chlorazine had a solvent effect on this fibrin, and that after a short time a free

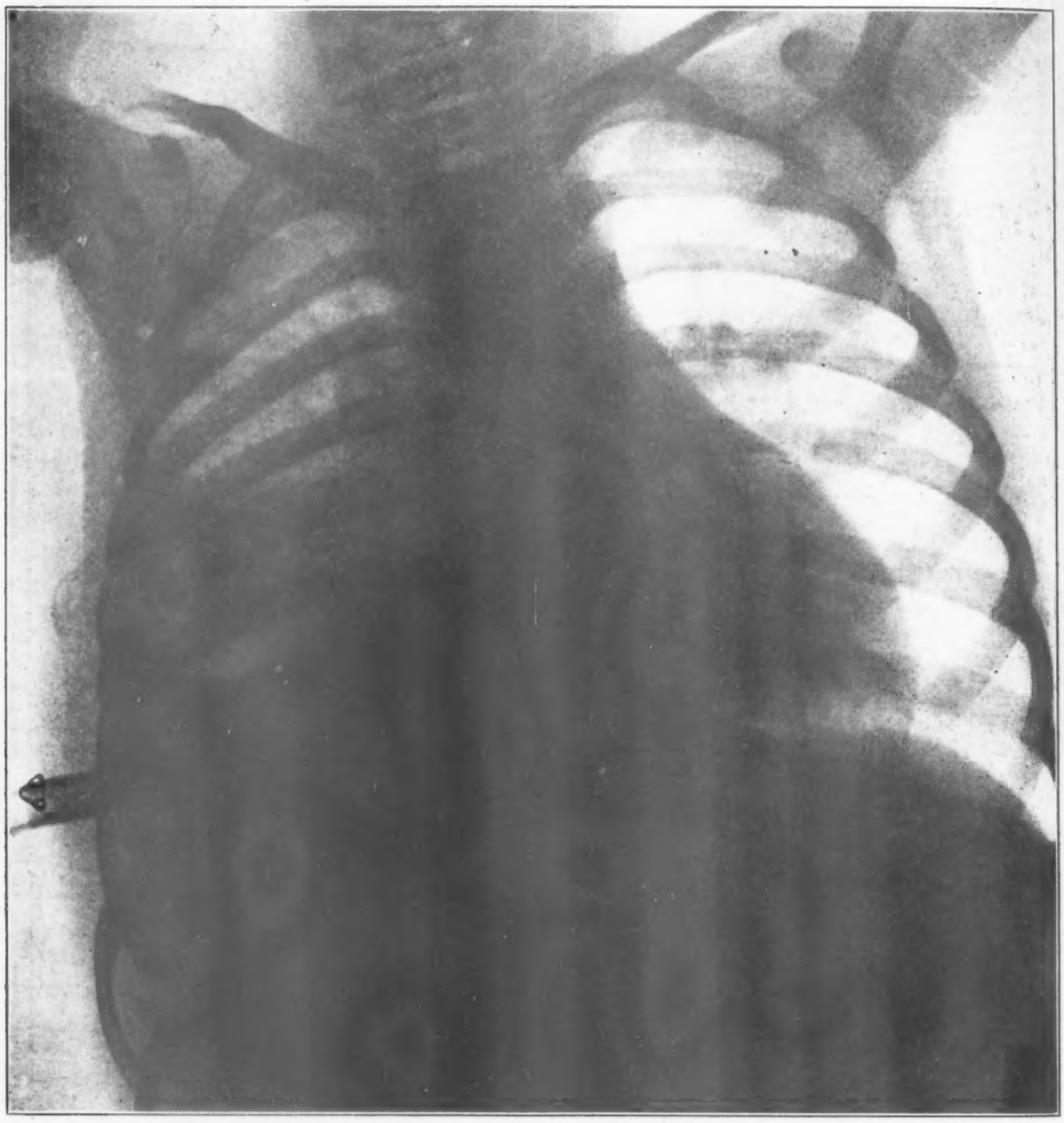


CASE W. B. May 25, 1925. Picture No. 1, on admission, shows 4-inch tube in chest, with empyema; tube had been inside chest ten days.

return flow was established without difficulty.

The period of time that the tube required to be left in varied in this series from nine to twenty-two days.

I realize that 17 cases is too small a series upon which to base any definite conclusions, but so far, I am very enthusiastic and believe this method is worthy of serious consideration. I have also used this same method on several adults with good results, but as yet have not formed any definite opinion as to its relative value.



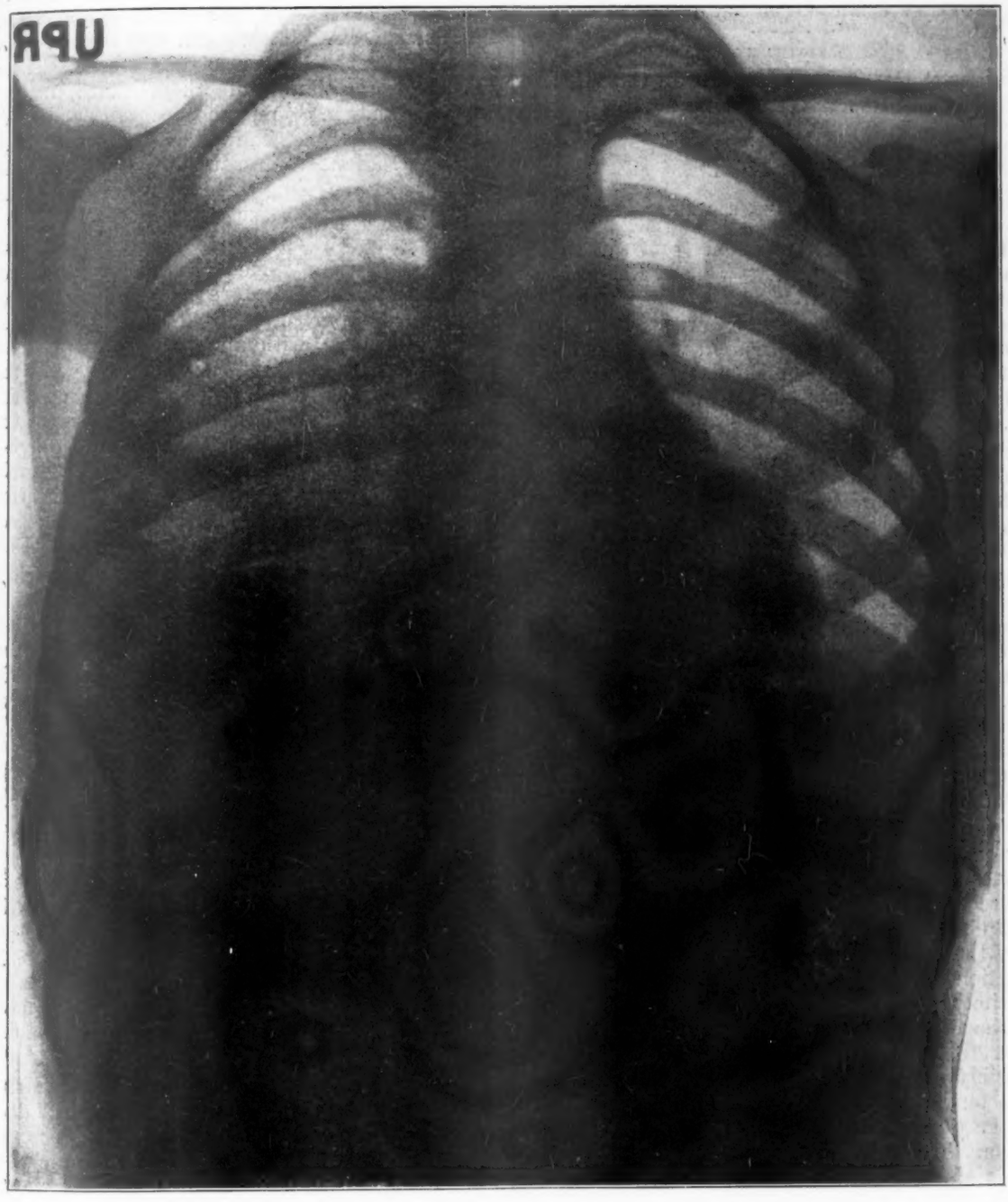
CASE W. B. Picture No. 2. Tube has been removed through intercostal incision. Cavity being drained.

Dr. D. C. Patterson, Bridgeport (closing): The method might sound simple—just put in the tube and let the valve do the work. It does, however, require a lot of personal work. I found I was not able to turn the cases over to the internes. Every one of these patients was dressed daily by myself. The patient should be watched carefully, and, if the chest cavity isn't draining, the patient will soon show signs of it. There is always some reason for that, and in most cases I find it is a thick, spongy exudate which can be washed out. This generally occurs about one week after the introduction of the tube.

Dr. Truesdale spoke about when to stop this work and do a rib resection. I hold no brief for this method, and if the patient wasn't making

good progress in two weeks, I wouldn't hesitate to do a rib resection. However, I have had to do only one secondary rib resection in these twenty-one cases. That is one reason why I favor the treatment.

the little children that are moribund, do not be in a great hurry to get out the pus. Just establish drainage and let a small amount of pus run out at a time. Tie a knot in the tube and let it stand for 24 hours and let the patient accommodate himself to the lessened exudate in his chest. I think this is very important.



CASE W. B. Picture No. 3—June 11, 19 25—shows chest clear, patient recovered.

The value of Dakin's—Dr. Keefe said it didn't make much difference whether you used that or any other solution, but I think that Dakin's does liquify the exudate, so that it becomes less stringy and will wash out through a small opening.

One thing more:—In the very sick patients, in

The only thing new about the treatment is the use of the tube with the drainage valve. This, or some modification, I have been using since 1922, and have found it very efficient and satisfactory.

Case Records of the Massachusetts General Hospital

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY

RICHARD C. CABOT, M.D., AND HUGH CABOT, M.D.

F. M. PAINTER, A.B., ASSISTANT EDITOR

CASE 12031

MEDICAL DEPARTMENT

A boy of seventeen was sent from the Emergency Ward November 24 with a diagnosis of possible general peritonitis. No past history was obtained except that two weeks before admission he burned his left hand with acid. The hand had been dressed regularly by a physician, but had been somewhat swollen and painful.

Forty hours before admission he was suddenly seized with chill and pain in the upper abdomen and lower anterior chest. The pain was most severe on the right, extended to or a little below the level of the umbilicus, and was aggravated by deep breathing and by a slight cough which he tried to suppress. He raised some very tenacious bloody sputum. He vomited once or twice at the onset, not later. He had marked prostration and trouble in breathing. He had also some pain in both shoulders, fairly severe on the right from the base of the neck across the apex to the acromion. He was sent in by a physician who found a tender movable mass in the right upper quadrant.

Examination showed a well nourished boy in obvious respiratory distress and with slight cyanosis of the face, lips and finger nails. There was a patch of dermatitis below the lower lip on the left. The mouth and tongue were dry, the throat and fauces injected. The respiration was rapid and labored, the expiration at times grunting. There was slight dullness at the left base. Otherwise the lungs seemed clear. The descent of the diaphragm seemed possibly diminished on the left. The abdomen was tender throughout, especially in the right upper quadrant. There was spasm on respiration throughout the upper abdomen and on the right side to below the umbilicus. Both recti were spastic, especially the upper right; the spasm could be largely relieved by splinting with the hand. Peristalsis was audible throughout the abdomen. There was marked borborygmus at times. Rectal examination showed tenderness on both right and left. The right shoulder showed tenderness from the base of the neck across the apex to the acromion, apparently cutaneous hyperesthesia. On the left hand were two small dry punched-out ulcers. The dorsum of the hand was swollen and slightly reddened. There were small axillary glands on the left.

The temperature was 102°-105.5°, the pulse 98-144, the respiration 24-52. The urine was not remarkable. The blood showed 15,000 to 28,500 leucocytes, 88 per cent. polynuclears, reds normal. A Wassermann was negative. A blood culture November 29 was sterile. There was a large amount of thick mucopurulent sputum showing pneumococcus Type IV. X-ray November 24 showed the left base hazy and less radiant than usual. The remaining portions of the lung field were clear. The root markings were somewhat increased.

The patient was too ill for entirely satisfactory examination. He spat up bright blood. In a consultation before November 27 Dr. F. T. Lord reported, "Slight dullness at right base posteriorly without other signs. Slight dullness at left base anteriorly. In view of the bloody sputum and the cough the pain in the abdomen is probably due to trouble above the diaphragm. I cannot make a definite diagnosis, but think that pneumonia is the more probable explanation. Pulmonary infarction from a vein in the left arm is also possible. Suggest typing sputum; also question of tuberculosis."

November 29 there were râles and bronchial breathing at the left base and some râles at the right base. The rectal temperature was 104°. November 30 he was slightly delirious. The leucocyte count, which had fallen from 28,500 to 15,000, rose to 23,500. December 2 he died.

DISCUSSION

BY DR. RICHARD C. CABOT

NOTES ON THE HISTORY

Anyone sent to a hospital with the diagnosis of general peritonitis is likely to be very ill, as all the possible alternatives are themselves serious. Such a diagnosis is not often made unless there are strong evidences pointing to it. The previous history does not seem however to be such that it could with any probability be related to the present illness.

The initial symptoms of that are not characteristic of general peritonitis. The chill does not often appear so early. The character and position of the pain are fairly characteristic but the cough and especially the tenacious, bloody sputum arouse at once suspicions that we are dealing with a case of pneumonia, with the so-called referred abdominal pain. The presence of vomiting does not in any way exclude this as vomiting is in a good many cases the initial symptom in pneumonia. On the whole the most important element previous to the physical examination in the history is the suspected presence of a tender movable mass in the right upper quadrant.

NOTES ON THE PHYSICAL EXAMINATION

The rapid, labored, grunting respiration, the notable though slight cyanosis of the fingers, lips and nails, and the slight dullness at the base of the left chest, with possibly some diminution in the descent of the diaphragm, are all quite consistent with the diagnosis of pneumonia.

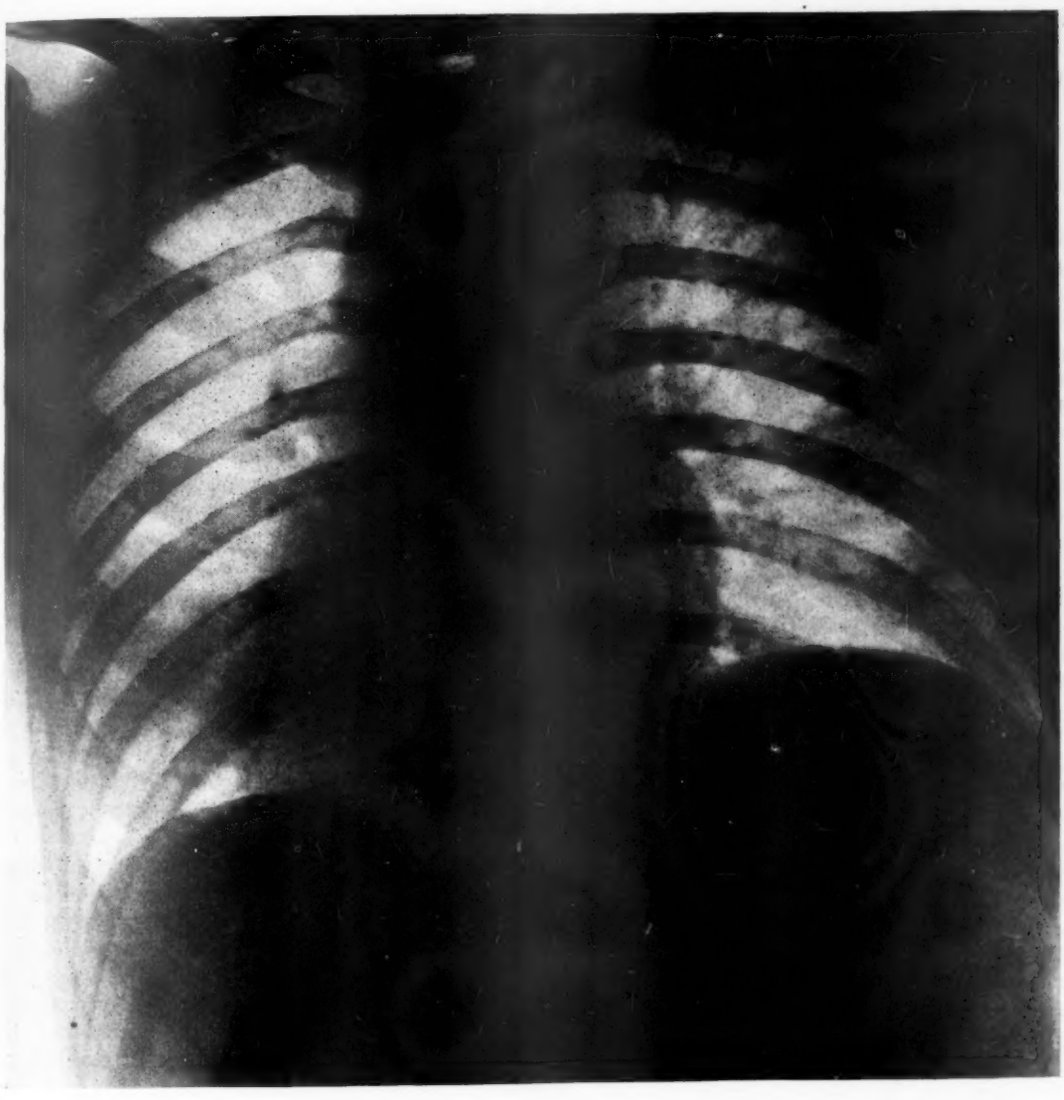
We get no account of the breathing at the dull left base. It would be very strange if any such dullness were present without some modification of breathing.*

The abdominal examination is certainly suggestive of peritonitis. The tenderness and spasm, though by no means invariable symptoms of peritonitis, are certainly suggestive. On the other hand, the audible peristalsis is distinctly against this diagnosis, as ordinarily the intestines do not move audibly in any such disease.

The rectal examination is probably not significant. Unless tenderness is more localized than it appears to be in this case we cannot pay much attention to it.

The area of cutaneous hyperesthesia at the right shoulder is interesting, though I cannot interpret it. Possibly it has some relation to an irritation of the diaphragm. Reference will be made to the condition of the hand a little later on.

From the rest of the history we get nothing particularly useful in differential diagnosis. The temperature, pulse, respiration, leucocyte count, the sterile blood culture, the sputum, the X-ray report, are all perfectly consistent with pneumonia, and all of them except the X-ray would be consistent also with a peritonitis. Towards the end the physical signs at the left base become much more characteristic of pneu-



The left base is hazy and less radiant than usual. The remaining portions of the lung field are clear. The root markings are somewhat increased.

*There was no bronchial breathing and no increased or decreased tactile or vocal fremitus. F. M. P.

monia, and with the appearance of delirium and the rising leucocyte count, this on the whole seems the most probable diagnosis.

DIFFERENTIAL DIAGNOSIS

Although as I have said the diagnosis of pneumonia seems a good deal more probable than any other, there are certain facts which make us rather doubtful about it. In the first place, the referred pain, if it is such, which is described in the abdomen, is on the right side, and the most characteristic physical signs on the left. On the other hand, we have no satisfactory clue to the origin of the peritonitis, if any such is present, no tenderness or local spasm develops in the place where we expect it with appendicitis. For acute gall-bladder disease the age and sex are quite uncharacteristic. There is no history to suggest peptic ulcer. Pancreatitis at his age and in the absence of any gall-bladder history is rare. The same may be said of intestinal obstruction. The absence then of any common cause for a general peritonitis must militate somewhat against any such diagnosis.

Finally one must inquire whether the ulcers on the left hand may possibly have been the origin for a general streptococcus septicemia, in which the pneumonia, if there is any present, is only a minor incident. This seems to me improbable. In the first place the description of the local lesions is not what we should expect if they had been the source of a general infection. Then there is little suggestion of any progressive advance of that infection up the arm, no evidence of lymphangitis, though there is perhaps some axillary adenitis. I think the possibility may be excluded.

With this we return to the original diagnosis, which I believe to be correct, pneumonia. As to the type of pneumonia there is little to say. It seems a little more like a lobar than like a bronchopneumonic process, but the distinguishing symptoms are not clear.

I see no reason to predict any disease of any organ other than the lung. There may be some pneumonia on the right in addition to that which I believe to exist on the left, but no other organ in the body seems to be incriminated.

CONCLUSION FROM X-RAY

Changes suggest a pathological process in the left base, probably early pneumonia.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Lobar pneumonia.

DR. RICHARD C. CABOT'S DIAGNOSIS

Lobar pneumonia.

ANATOMICAL DIAGNOSIS

Empyema, right.

Bronchopneumonia with abscesses and focal tuberculosis.

Ulcer of the left hand.

DR. RICHARDSON: The examination was restricted to the thorax.

On the anterior surface of the left hand, thumb side, there was a small ulcer 1½ by 1 cm. There was a palpable gland in the left axilla.

In the right pleural cavity there was about 1,500 c.c. of pus. This pushed the lung up markedly.

The pericardium, heart and aorta were negative.

The left axillary glands showed some enlargement and were dark red.

Right lung: No areas of consolidation. The lower half of the lung was collapsed. In the lung tissue at one place there were two small abscesses.

Left lung: Scattered through the lung tissue there were numerous ill-defined areas of pneumonia and small collections of pus, the latter in bronchi or abscess-like cavities. In the inferior anterior portion of the upper lobe there was an abscess cavity about 3 by 5 cm. The microscopic examination shows besides this some small areas of focal tuberculosis.

CASE 12032

SURGICAL DEPARTMENT

A married Englishwoman sixty-six years old was sent from the Emergency Ward September 23, 1918. For the past five years she had been troubled with "indigestion"—abdominal discomfort and gas on the stomach, usually more marked soon after eating. This had grown progressively worse. Her bowels were somewhat constipated.

A week before admission she began to have diarrhea with three or four dark stools a day. She was taking bismuth. Three days before admission she was seized with sharp abdominal pain and her bowels stopped moving. She vomited several times during the day and night, and had vomited more or less since that time. During the past twenty-four hours the vomitus had had a stercoraceous odor. Since the onset of the pain her bowels had not moved and she had passed no gas by rectum. The severity of the pain had not changed.

Examination showed an obese woman. The lungs showed scattered râles at the left base. The abdomen was round, tympanitic and soft. In the left lower quadrant there was an indefinite mass on deep palpation, smooth, and relatively not tender. On rectal examination the passage of the finger was completely obstructed high up by a large irregular mass.

Before operation the temperature and respirations were normal, the pulse 80 to 120.

Milk and molasses enemas were given twice a day with good results. The patient immediately vomited solid food. She had considerable gas pain. September 27 a stomach wash gave stercoraceous material.

September 28 operation was done. October 19 she was discharged relieved.

After her discharge she felt perfectly well for six months. Then she began to have "cramps in the stomach" after eating certain things such as pork, and after drinking milk. These attacks occurred once in two to four weeks. With the attacks the stools were occasionally clay colored. Between the attacks she felt perfectly well. Six months before her second admission, September 18, 1925, her sclerae were yellow. She had no jaundice at any other time. Three months later she had a very severe attack of shifting epigastric pain radiating to the lumbar region. She was nauseated, but did not vomit until she took an emetic. A physician gave morphia. After vomiting her stomach was sore for two or three days, though the acute pain stopped at once. During the next three months she had about two such attacks a week. Sometimes the induced vomiting did not relieve the pain until one or two hours after the onset. During the attacks the stools were light colored. During this period her appetite was poor and she had much gas on her stomach. Since her first admission her weight had fallen from 200 to 175. She had lost five pounds in the past three months.

Upon examination she was well nourished, quiet but apparently toxic. The sclerae and the skin over the abdomen were slightly jaundiced. There was an area of moderate tenderness over the gall-bladder region, but no spasm. The pulse was not obtained in the right wrist. The blood pressure was 140/70.

Before operation the temperature was 101° to 97.5°, the pulse 100 to 75, the respiration 30 to 20. The urine was dark at one of two examinations, cloudy at another, specific gravity 1.022, a trace of albumin and a trace of bile at one examination, sediment loaded with leucocytes at the first, rare leucocytes at the second. The blood showed 26,400 to 14,400 leucocytes, 92 per cent. polynuclears, hemoglobin 75 per cent., 4,770,000 reds, smear normal, Wassermann negative. Bleeding time 1½ minutes, clotting time 19 to 21 minutes. Icteric index 25. Van den Bergh test, direct reaction delayed, indirect reaction immediate.

September 23 the patient was started on a course of 10 c.c. of 5 per cent. calcium chloride intravenously twice a day. September 25 operation was done. The drainage tube was connected with a suction apparatus. There was moderate drainage. The patient did exceptionally well. October 1 there was foul smelling pus from the wound. The wick was removed and a catheter inserted in its place with suction on both tubes. October 5 the catheter came out of the common duct. Suction was still being used on the other catheter. There was profuse drainage into the dressing. October 8 the wound was still extensively undermined with pus welling up from the bottom. The suction apparatus was taken away. The wound healed well from this point. Except for a slight respiratory infection lasting two days the patient made a good convalescence. October 25 she was discharged.

November 4 she reported, feeling very well. At the center of the incision there was a granulating area half an inch deep and an inch and a half in length.

Discussion

BY EDWARD P. RICHARDSON, M.D.

Indigestion for five years, abdominal discomfort and gas on the stomach in a woman sixty-six years of age would suggest definitely an organic condition which would require investigation, particularly since it had grown progressively worse. It is rather a long history for carcinoma of the stomach, although it might be carcinoma upon some previous lesion.

The remainder of her history is clearly suggestive of an obstructing lesion in the intestinal tract. Diarrhea it seems to me is a frequent story with partial obstruction of the large bowel. Many cases of carcinoma of the colon show at times diarrhea, at times constipation. Occasionally cases are admitted to the medical wards with a diagnosis of colitis.

The dark color of the stools is probably due to bismuth.

The sudden pain suggests a complete obstruction, diarrhea being possibly evidence of a partial obstruction previously.

The important thing in the examination was the irregular mass by rectum, and if that is an accurate examination that would seem to clinch the diagnosis as an obstructing lesion of the rectum, probably malignant.

On admission they did not do an immediate emergency operation, just why is not clear from the record. It is certainly true that if we have an obstruction of the colon and gas can be passed and the patient can be relieved by enema, it is much better to postpone operation until the distension is relieved. But in spite of the fact that enemata were effectual and she had temporary relief of symptoms the obstruction came back and operation was necessary.

Pre-operative diagnosis, first entry

Intestinal obstruction.

First operation

Spinal apothesine. Midline incision below the umbilicus. The abdominal cavity was

opened and explored for obstruction. In the small intestine a large gall-stone (?) enterolith was found obstructing the gut. Behind the stone the small intestine was collapsed. The sigmoid and rectum felt thick walled and nodular, suggesting diverticulitis. A small opening was made in the small gut over the stone, the stone was removed, and the gut was closed with catgut and then a layer of silk stitches.

PATHOLOGICAL REPORT

A large brownish-gray calculus measuring 2.5 by 2.7 by 3.5 cm.

FURTHER DISCUSSION

In going back to the history of the first admission it is quite easy to associate her distress for five years with cholelithiasis. It is more difficult to associate her obstructive symptoms with the gall-stone. Gall-stone obstruction is not extremely rare. Most active surgeons have operated on one or two cases, and I can only suppose that her attack of pain and obstruction following the diarrhea was due to impaction of this gall-stone; that later in some way fecal material got by, and then it was impacted again in the gut, causing the second attack.

In regard to the rectal findings I think that is a question of who did the rectal examination. There surely was not anything found on exploration which would account for a hard irregular mass found by rectum, and I should doubt very much whether the finger was completely obstructed in this case.

Second admission. The history is fairly suggestive of biliary tract disease. The recurrent attacks of pain, epigastric, coming on in rather definite attacks, the presence of jaundice, and possibly the fact that light-colored stools were noted, are all suggestive of cholelithiasis.

We have then a history suggestive of gall-stones, the confirmation of jaundice on admission with tenderness over the gall-bladder, and also this story of a stone taken from the intestine, which presumably was a gall-stone. The question was however to make a more accurate diagnosis of the condition. From the presence of jaundice, the frequency of the attacks of pain, coming on twice a week, one would suppose that the patient had a stone in the common duct. We get jaundice with attacks of acute cholecystitis without obstruction in the common duct, due I think often to edema around the common duct or possibly to associated hepatitis. But here we have in addition to this jaundice noted on two occasions and present at admission the story of two attacks a week for three months. I would not put much stress on that, but to my mind it is suggestive of stone in the common duct rather than in the gall-bladder. The local tenderness might be from an inflammation of the gall-bladder, or it might be from hepatitis associated with infection of the ducts. Her temperature, her white count suggest a definite infection, as does the differential count. Therefore I should make a diagnosis in this case of stone in the common duct, possibly with associated cholecystitis and cholangitis.

The fact that there is jaundice is shown definitely by the icteric index. It seems to me an important thing in diagnosis to have attention drawn to the condition of the blood serum rather than to the staining of the tissues. This index is simply an arbitrary number gained by comparing the color of the serum with a scale, the normal being about five. The van den Bergh reaction, a test for bilirubin retained in the serum, is supposed to show in obstructive jaundice a direct reaction, but in the cases we have done the results have been too variable to influence us as to operation. In this case, if the diagnosis of obstructive jaundice is correct, this patient should have had an immediate direct van den Bergh test. The indirect reaction is simply an index of the amount of bilirubin in the serum. It is always immediate, the color varying in intensity with the amount of bilirubin present.

I do not think by any means that every patient of seventy-three who has a cholelithiasis should be operated on. There are occasionally people who get along fairly well even with stones in the common duct. They have occasional attacks of pain, and meantime the bile seems to pass around the stone. We must consider that operation on the common duct is a serious condition in a frail aged person. In this particular patient, although she was seventy-three, I think operation was indicated on account of the frequency and the severity of the attacks, and from the evidence of infection.

PRE-OPERATIVE DIAGNOSIS, SECOND ENTRY

Stone in common duct.
Chronic cholecystitis.

SECOND OPERATION

Gas-ether. A vertical incision through the right rectus. No general exploration of the abdomen. The gall-bladder was slightly thickened, empty, adherent by dense old adhesions to the duodenum. It appeared from the findings that the stone causing the previous obstruction had ulcerated through the gall bladder into the duodenum. Stones were felt in the common duct. This was hooked upward by placing the finger through the gastro-hepatic omentum. The gall-bladder with the adhesions was displaced outward. The common duct was opened and several large stones removed from the common duct. It was then found impossible to pass the probe into the duodenum and palpation of the pancreas was not conclusive as to further stones. The little

finger was passed downward into the duct palpating two more stones near the ampulla, which were successively removed. The common duct was sutured around a catheter. The cystic duct was opened. A small stone was removed from it and the duct was closed by suture. One cigarette wick. The usual closure.

Further Discussion

One of the first points in the operation is the question of how the gall-stone got into the intestinal tract causing the previous obstruction. As it happened, this same week I operated on another case which three years previously had obstruction of the intestinal tract from gall-stone. So I had two opportunities to see how the gall-stone got into the intestine. In this case undoubtedly the gall-stone got into the intestine simply by chronic ulceration through the wall of the gall-bladder and through the adherent duodenal wall. In the other case I mentioned, I operated for carcinoma of the pancreas. There was a puckered scar between the gall-bladder and the duodenum, and in that case too the gall-stone got in in the same way. I think that is the usual way. I think it is very rare that a stone gets in through the natural passages.

In regard to the operation itself, the thing to consider principally, in addition to operative shock, was the question of hemorrhage. This patient has a coagulation time of nineteen to twenty-one minutes. On this account, as a preliminary to operation, she was given calcium chloride intravenously. Some years ago we gave large doses of calcium lactate by mouth, but now we feel that it is more effective given into the vein and not into the tissues, where it produces much reaction. It can be given without toxic symptoms. So that was the first precaution in regard to hemorrhage.

The second was not to do anything more than was necessary at the operation, so as not to produce oozing surfaces. On this account the gall-bladder was not removed.

The great difficulty in operating for stones in the common duct is to get complete removal of all the stones. Dr. Young has something which he might say about this, in view of necropsy material in this hospital. But I would call attention to the fact that only about one and a half inches of the ducts can be felt. It is possible for stones to be in the liver or in the pancreas, where it is very difficult to feel them, particularly if the pancreas is indurated. In this case, after removing all the stones I could feel, there were two more which could be felt by passing the finger into the duct. I think that is a very important part of the operation which should not be omitted, when the duct is large enough to admit the finger. The reason for taking the stone out of the gall-bladder rather than removing it was that I did not want to leave an oozing surface and did not want to prolong the operation.

Suction drainage I believe important in common duct cases. Here we use simply a water pump. By this means we reduce any back pressure in the bile ducts and also prevent leakage of bile. If leakage occurs with infection these elderly people have very low resistance, and in the past I have seen them gradually fail and die from a pocket of bile and infected fluid which steadily seemed to increase in size. So bile was sucked out by this apparatus.

If she had started to bleed, which she did not, I think the only effective form of treatment is by tranfusion. Certainly nothing can be accomplished in jaundiced cases by opening the wound and attempting to control bleeding, which is nothing but a capillary ooze. If she had bled I would have transfused the patient, and if she had continued I would have continued to transfuse her as long as donors were available. Either there would have been a slow improvement with the relief of back pressure on the liver or we should have lost the patient. I know of no other measure that is likely to be effective. Of course calcium might be repeated, perhaps given continuously by mouth.

Dr. Cabot: Do you know whether the clotting time did go down after you gave calcium in this case?

Dr. Richardson: No, I don't know. Unfortunately that is not recorded. But it has in similar cases.

Dr. Young: I was interested in the question of how many stones were left behind after operating for stones in the biliary tract, because of the number that Dr. Oscar Richardson kept bringing up here in these exercises. So some time ago I started looking up the necropsy material in this hospital. I have not quite finished it, but I have been over a large number of series, and the statistics here seem to agree with the statistics in one or two other clinics that have reported them. For instance at the Mayo Clinic, where the necropsy material is over ninety per cent. of all deaths, a little over a third of all cases where operation has been done for the removal of stones in the biliary tract still have stones present at necropsy. In the cases I have looked up here between a third and a half of all cases show stones left behind. And all of the men whose experience is extensive in this type of surgery emphasize the great difficulty in being sure of removing them. Finger exploration where it is possible to get a finger into the duct, and in particular the trained finger palpating the duct is the most certain method of being sure of stones, just as Dr. Richardson spoke of missing them by probe. A probe will miss in many cases at operation. But I think it is rather discouraging to feel

that in spite of the best technique such a large proportion are left behind.

A SURGEON: Don't you think it is true however that as patients recover there are relatively few who have symptoms from stones in the common duct?

DR. YOUNG: Yes. I think that is true, and the two safety valves for this are first drainage, and the other is that the largest of the stones are removed and in many cases the enlargement of the duct has taken place so that they drain through into the duodenum. Because certainly no such proportion as thirty-three per cent. come back with recurring symptoms.

DIAGNOSIS

Cholelithiasis, cystic and common duct stones.
Chronic cholecystitis.

CASE 12033

SURGICAL DEPARTMENT

An Irish-American plumber sixty-six years old entered October 8 complaining of pain in the epigastrium and constipation. He had typhoid fever at eleven. When he was fifty-four he had chills and fever for a month. These were his only illnesses. Nine years before admission he had night sweats for a week or two. For nine years he had had hemorrhoids. For six months he had had a pharyngitis (?). For ten years he had taken no alcohol. Before that he drank beer constantly. He was very "nervous," and though he slept six hours a night he was very restless, waking two or three times. Of late his memory had been rather poor. Two years before admission he weighed 128 pounds. He now weighed 107.

For three weeks he had been unable to move his bowels until October 6, when he was treated in the Out-Patient Department. Since that time he had had two good movements. Now he was constipated again. He had a constant desire to defecate, compelling him to get up two or three times at night. He could pass only gas at stool. For three weeks he had had dull aching pain in the epigastrium radiating to the back; also headaches. Once or twice a week he vomited a considerable part of his meal. When he took a large glass of water part of it seemed to stop at about the level of the sternum and a portion was regurgitated. When he vomited he felt severe pain under the sternum and in the epigastrium, and also a disagreeable sensation in a region which seemed to be along the route of the esophagus. The vomitus had a sour disagreeable taste. The night before admission he had a severe attack of vomiting, and vomited all that he had eaten at noon. During the three weeks his hemorrhoids had been much worse. He had severe pain in the rectal region and passed a great deal of blood by rectum. The hemorrhoids, however, never came out. Three weeks before admission he stopped work.

Examination showed a somewhat emaciated man, up and about, showing some evidence of loss of weight. The skin of the back showed three patches with silver grayish center and dull red periphery, resembling psoriasis. There were many small hemangiomata, especially over the left side, and many small fibromata over the trunk. Only a few lower teeth remained, in poor condition and showing attrition. There was pyorrhea. The whole tongue showed fine sustained tremor. There was also non-intention tremor of the hands and forearms. The throat was slightly red, the tonsils atrophic. The entire lumbar spine was stiff. The heart and lungs were normal. The arteries were palpable and tortuous. The blood pressure was 140/100. The abdomen was held stiff, especially the upper portion. Satisfactory examination could not be done. The abdomen was round and seemed distended, slightly more on the right than the left. There was slight tenderness in the right upper quadrant. Rectal examination showed hemorrhoids. At the end of the examining finger as the patient strained a rather irregular firm annular ring could be felt projecting into the lumen of the rectum, rather more marked in the posterior lateral portion than in the anterior. There were no ulcerated areas and no tenderness or bleeding. Another examiner could feel no mass by rectum. By proctoscopy a firm projecting growth, slightly ulcerated, was seen in the rectum six inches from the anus on the posterior wall. By X-ray a barium enema entered the large bowel encountering no definite obstruction. The outline was smooth except at a point just proximal to the rectosigmoid junction, where there was an annular filling defect which appeared constant at the fluoroscopic examination and on the film. The bowel proximal to this point appeared atonic and somewhat dilated.

Before operation the temperature and respiration were normal. The pulse was 97 at entrance, afterwards not remarkable until after operation. The urine was normal. (The amount is not recorded.) The blood showed 12,000 leucocytes, 68 per cent. polynuclears, hemoglobin 80 per cent., 4,600,000 reds showing achromia, anisocytosis and diffuse basophilia; platelets diminshed. A Wassermann was negative.

October 16 operation was done. The patient made a good ether recovery. October 17 the temperature rose to 102°. It continued to show afternoon rise up to 100-101.9°. A patch of bronchopneumonia was found at the right base. October 24 the temperature was normal. The next day however it rose again to 101°,

and the patient had slight distension and vomiting which continued after a stomach wash.

October 26 a second operation was done. After it the patient vomited only once. Subpectoral saline was given that night and the next day. He began to have moist râles throughout the chest and some cough, and was very restless. The non-protein nitrogen was 58, the blood chlorides 352 mgm. per 100 c.c. of blood. October 27 he died.

Discussion

BY EDWARD L. YOUNG, JR., M.D.

A man of sixty-six with epigastric pain, constipation, and loss of weight directs our attention at once to the possibility of malignant disease in the gastro-intestinal tract. At first thought we have to realize that the disease may be either at the upper or the lower end of the digestive tract, because trouble at either end may give symptoms at the other. The constipation which is spoken of is it seems to me more marked than we ought to have from anything except an organic lesion, especially when he has a constant desire to defecate and is able to pass only gas. If this were malignant disease of the colon we should expect to have a period of diarrhea and bleeding, although that does not occur in every case until the last stages. The hemorrhoids may be entirely secondary to the disease itself. They are always dangerous, not because of themselves, but because they may attract attention away from disease higher up.

The examination is that of a man in rather poor general condition. The distribution of distension of the abdomen I think is of no importance, as distension is due to gas in the bowel. and bowels can be in any part of the abdomen. The description of the mass which is felt in the rectum and seen by proctoscopy of course seems to settle the diagnosis, even though the barium enema does not show any very marked obstruction. It does show, however, the filling defect corresponding with the mass which is seen and felt. Loss of weight in these cases is not always the evidence of a spread of disease, and the only thing that can be done is to see from abdominal operation whether or not there is evidence of metastases and whether the case is operable. If the patient is in good condition the first stage of a resection can be done and later the complete extirpation of the growth. I assume the first operation was of this nature and that a resection of the growth was made and a colostomy done

DR. YOUNG'S PRE-OPERATIVE DIAGNOSIS

Carcinoma of the sigmoid.

PRE-OPERATIVE DIAGNOSIS OCTOBER 16

Carcinoma of the rectosigmoid juncture.

FIRST OPERATION

Gas-ether. A left rectus incision was made in the lower abdomen. The growth was found at the lower end of the sigmoid, which had fallen into the pelvis and made it possible to reach the growth from the rectum. It was an adenocarcinoma completely surrounding the bowel and involving about two and a half inches of it. There were many large glands. The growth itself had invaded the mesentery. There were no nodules in the liver. Because of the extent of the local growth and the poor condition of the patient an end-to-end suture was considered too grave a risk for the benefit to be derived. The growth was therefore removed by sectioning the bowel below, tying the inferior mesenteric artery, and bringing the growth and the sigmoid out through a median incision for a permanent colostomy.

PATHOLOGICAL REPORT

A section of large intestine 21 cm. long with mesentery attached. Midway between the cut ends there is an annular ulcerated growth 5.5 cm. in width with slightly elevated margins. A hard mass about the size of an English walnut distends the mesentery. Microscopic examination shows the structure of solid masses of gland tubules lined by atypical columnar epithelial cells which invade the mesentery.

Adenocarcinoma with metastases in the regional lymph nodes.

Further Discussion

The surgeon's description and reasons for what he did are the best comment on the operation.

We are not given enough description to make us sure of what this second operation was done for. We are told that the bowels were not moving. Distension is not mentioned other than the slight amount. Continued vomiting is the only symptom. That of course points toward an obstruction. With the temperature it may well be the vomiting of peritonitis, even though it is nine days after operation. On the evidence we have I imagine that something was done to relieve an intestinal obstruction.

DR. YOUNG'S PRE-OPERATIVE DIAGNOSIS

Post-operative intestinal obstruction.

PRE-OPERATIVE DIAGNOSIS OCTOBER 26

Intestinal obstruction, post-operative.

SECOND OPERATION

Local novocain. The abdomen was opened through a right lower rectus incision. Numerous distended and slightly discolored coils of small intestine presented. In the right lower quadrant there were a few coils of collapsed small intestine. All effort was made to find the adherent portion, but for fear of infection

nothing was done to relieve the obstruction. A catheter was put into the presenting loop of small intestine, which was judged to be a short distance above the obstruction.

Further Discussion

That is in fact what they believed. An ileostomy was done to try to relieve the obstruction. We do not know what effect that might have, inasmuch as the picture after this is the picture of sepsis, and I assume that is the cause of his death. The obstruction could not have been very bad, as the blood chlorids do not show too large a diminution.

Clinical diagnosis (from hospital record)

Carcinoma of the sigmoid.
Intestinal obstruction, subacute.
Colostomy.
Ileostomy.

Dr. Edward L. Young's diagnosis

Adenocarcinoma of the sigmoid.
Intestinal obstruction, post-operative.

Anatomical diagnosis

1. *Primary fatal lesions*

(Adenocarcinoma of the sigmoid with metastases in the regional lymph nodes.)
Intestinal obstruction.

2. *Secondary or terminal lesions*

Resection of the large intestine.
Ileostomy.
Lobar and focal pneumonia.
Acute pleuritis.
Acute peritonitis.

3. *Historical landmarks*

Slight chronic pleuritis.
Arteriosclerosis, slight.
Dilatation of the heart.
Chronic peritonitis.

Dr. Richardson: The head was not examined.

The skin and mucous membranes were pale. Pubes up there was a linear wound 16 cm. long partly healed. In the region of the upper part it was open for a length of 3 cm. and at the base of this opening the open end of the sigmoid was sutured. In the right upper quadrant there was a linear wound 10½ cm. long closed with sutures. From the region of the lower third a rubber catheter protruded. This catheter extended into the small intestine. The abdomen showed no definite distension. The wall was soft. The peritoneal cavity contained a small amount of purulent fluid material in the region of the lower half. The peritoneum in the lower half of the cavity was coated with fibrinous exudate and the coils of intestine were stuck together by the exudate in the region of the pelvic cavity.

The stomach was dilated and contained much brownish opaque fluid material.

Along a length of 75 cm. above the ileocecal valve the small intestine was flattened, more or less collapsed, and there were old adhesions extending to the mesentery and more recent fibrinopurulent adhesions. From this region up to a point 135 cm. above the ileocecal valve the intestine was still more or less collapsed and the coils were bound together in places by old and recent adhesions. At one place a broad strip of omentum was rather firmly adherent to the wall of one of the coils. Just above this region of the collapsed coils, about 135 cm. above the ileocecal valve, the rubber catheter was inserted into the small intestine. The intestine above this point showed much dilatation and contained a large amount of opaque brownish fluid material. The mucosa was negative. The duodenum was negative.

A portion of the large intestine in the region of the sigmoid was wanting. The large intestine above this was not dilated and contained a small amount of fecal material. The mucosa was negative. The lower end of this portion was sutured in the wound in the abdominal wall as mentioned. About the lower two-thirds of the rectum was present and negative. In the mesentery here and there were rows of sutures.

The mesenteric and retroperitoneal glands were negative.

In each pleural cavity there was a small amount of thin dirty brownish-red fluid and fibrin. There were a few scattered old pleural adhesions on each side. The trachea and bronchi contained much dirty brownish-red frothy fluid and mucus.

The lower half of the upper lobe of the right lung was voluminous, solid, and the pleura coated with fibrinous exudate. Sections showed frank gray-red pneumonia. The lobe elsewhere showed much hemorrhagic edema. The middle lobe showed no areas of consolidation, but much hemorrhagic edema. The lower lobe showed much hemorrhagic edema and scattered smaller and larger foci of gray-red pneumonia. The upper lobe of the left lung showed much edema, but was otherwise negative. The lower lobe showed much edema with scattered smaller and larger foci of gray-red pneumonia. The pleura presented patches of fibrinous exudate.

The heart weighed 297 grams. The myocardium was pale brown-red and flabby. The cavities showed slight to moderate dilatation. The valves were negative. The coronaries were free, capacious, but showed a moderate amount of fibrous sclerosis scattered along their walls. The aorta and great branches showed a slight to moderate amount of fibrous sclerosis.

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IS THERE REASON FOR FURTHER DISCUSSION OF FEES?

FROM different sources the attention of the JOURNAL has recently been called to the matter of fees charged by surgeons. It is not an unusual subject for discussion based on specific instances.

The occasion for this immediate interest was a charge by a surgeon of ten thousand dollars supplementing the charge of four thousand dollars by the attending doctor. The Editor of this JOURNAL was given the privilege of seeing a letter written by a party in interest setting forth the above statements. There was no criticism of the professional service, only a statement that the year had brought some unusually trying experiences.

We have commented in a previous editorial on the inadequate salaries paid to physicians in the employ of the State. Our Commissioner of Health is paid only seventy-five hundred dollars a year, the Superintendents of State and Municipal Institutions are inadequately paid, and our District Health Officers hardly get enough to support an average sized family. These groups cannot augment the salaries by supplementary work and yet they are men of character and ability who have fitted themselves for their work by study and experience.

The fees charged by eminent expert internists do not compare favorably with the fees charged by some surgeons, and it will be conceded by most well informed physicians that the study of the problems of general or special internal diseases calls for the best type of mind, long training and experience before one can secure recognition as an authority in his special field. We have not often been informed of charges by internists which are equal to those charged by surgeons. The writer was once associated with a case to which Sir William Osler was called in consultation. His fee was one thousand dollars. The people were well able to pay more and Dr. Osler knew all the facts. Dr. Osler could with propriety have charged as large a fee as any practitioner be he internist or surgeon.

It is obvious and conceded that the good surgeon must have a well developed technic and natural mechanical ability. Where an individual has, in addition to his natural qualities, a mind which enables him to blaze the way to important discoveries and has given to mankind facts and methods which are of outstanding importance there may be reason in exacting the largest fee which a wealthy person may be induced to pay. Such men however are not inclined to allow the fee to obscure the responsibilities incident to the problems in hand. Whether the average well-trained surgeon who has not risen to the position of a great teacher can honorably charge fees larger than those which the leading internists feel are warranted is a real question.

It should be recognized that the ethics of medicine of past generations regarded this subject conservatively because of the fact that medicine was less an exact science than it is at the present time and also because the advancement of medical knowledge depended to a large degree on the contributions of the well-to-do laity. The laity has contributed enormous sums of money for the care of the sick and the equipment of research laboratories as a part of the scheme to advance the science of medicine with the understanding that physicians would also contribute much in service. If the day has come when these ideas are to be modified and medicine is to compete with business and law in the accumulation of large fortunes, this conception of medicine should be the common understanding and every doctor should adjust his fee table to the capacity of the patients to pay.

We believe this is not the common wish of the profession at the present time although it is probable that the whole matter of the relation of the doctor to his patient is not based on any universally accepted theory of ethics or propriety. It may be that even the majority may not have definite working plans for many seem to follow lines of least resistance and suffer in consequence, while a few may be unduly grasping.

In order to correct the injustice suffered by

some physicians we are of the opinion that much good would be accomplished if the state societies would study the subject of salaries paid to physicians in state employ and submit a report to the appointing powers, and that the special societies should consider the average fees which may be approved with the understanding that circumstances may warrant some deviation from hard and fast rules.

Conclusions by reputable bodies would help to establish a conception of reasonable charges in the minds of the average doctor and lead to less criticism in some cases or reasonable criticism in others.

We wonder if that suggestion in the code of ethics of the Massachusetts Medical Society to the effect that if a case warrants an unusually large fee that the matter should be discussed before the service is rendered, is very generally observed.

THIS WEEK'S ISSUE

Contains articles by the following named authors:

HAWES, JOHN B., 2nd., A.B., M.D. Harvard Medical School 1903; President, Boston Tuberculosis Association. The subject of his paper is "The Diagnosis of Clinical Hilum Tuberculosis," page 91.

DRURY, DANA W., F.A.C.S., M.D. Harvard Medical School 1904; Associate Aural Surgeon, Massachusetts Eye and Ear Infirmary; Aurist, Boston Floating Hospital. His subject is "Infantile Otitis Media," page 96.

PATTERSON, DANIEL C., F.A.C.S., M.D. University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore; Attending Surgeon, Bridgeport Hospital, Bridgeport, Conn. His subject is "Intercostal Drainage in the Treatment of Empyema," page 100.

The Massachusetts Medical Society

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(Communications and questions addressed to the Clerk will be gladly received and cheerfully answered.)

The use of pituitrin in labor before birth of the baby is only exceptionally indicated, and then only when the second stage is at a standstill with the baby's head on the perineum, in a situation where one or two satisfactory contractions of the uterus would bring about delivery.

Many, if not most, of the disasters consequent upon the use of pituitrin in labor have followed administration during the first stage. Here the physician is dealing with a powerful drug, unstandardized as regards strength, toward which the patient may or may not have an idiosyncracy. Invariably the uterine contractions are increased in strength and duration and, as a rule, in frequency, and the uterine contents are impelled with increased vigor into a channel not yet prepared to let them pass.

The effect of this situation is that an unknown increment of force is added to the forces of labor to bring about expulsion of the fetus. The resistance of the maternal pelvis to this is, of course, variable; it may be absolute if there is absolute disproportion between the size of the baby and the size of the bony pelvic girdle; in this case administration of pituitrin is a very grave error, and will result in rupture of the lower uterine segment in many cases with death of the mother as a consequence, and almost inevitably in death of the fetus from intrapartum trauma. At best, where careful observation has convinced us that no such disproportion exists, and where the baby's head is at a mid or low pelvic level the undilated os and other soft parts may afford sufficient obstruction to bring about similar results for mother, baby, or both.

These are not the only dangers in the use of pituitrin during the first stage of labor. Even in small doses of two minims or one, the uterus not infrequently goes into a condition of prolonged tonic contraction. Such a state is easily apparent to the patient as a long-continued agonizing pain, and to the physician or nurse as a hardening of the uterus under the palpating hand for a period which often lasts several minutes. Entirely aside from the possibility of rupture of a thin lower uterine segment, the fetal heart, if listened to during such a contraction, will almost inevitably be found to decrease in rate to well below 100, as a result of asphyxia from the interference with placental interchange. Here again the baby's life is endangered, as is also that of the mother.

With such evident dangers involved in the use of this powerful drug the attitude of the physician who orders his nurse over the telephone to administer an ampoule of pituitrin to a patient in labor cannot be too strongly condemned. Pituitrin should never be ordered for the patient in labor unless the physician is himself present to appraise the situation beforehand, and then only for such well defined indications as previously outlined.

The Section advocates the use of pituitrin after the uterus is completely empty of baby and placenta to combat or forestall the occurrence of postpartum hemorrhage. It deprecates the use of the drug in all cases before the

baby is delivered save when the head is arrested at the vaginal outlet and where one or two expulsive pains are all that are necessary for delivery.

In conclusion, the opinions of certain well known teachers of obstetrics published during the past ten years are of value:

Cragin (1916): "Experience with the drug has demonstrated the fact that . . . . for uterine inertia in the first stage of labor or until the cervix is either dilated or dilatable, pituitary extract is unsafe. . . . . The author's rule in the use of pituitary extract for uterine inertia is not to administer it unless conditions are such that if necessary he could deliver the child within a few minutes . . . ."

Williams (1917): "I would state categorically that the use of pituitrin is absolutely contraindicated in the presence of mechanical disproportion or before the cervix has become fully dilated. . . . . If this" (tetanic contraction of the uterus) "can occur during the latter part of the second stage in an otherwise normal labor, it is apparent what may happen if the head has been arrested at the superior strait as the result of a contracted pelvis or an abnormal presentation, or if the cervix is only partly dilated."

De Lee (1924): ". . . . believes, as he has since his first experience with this powerful drug, that pituitrin causes innumerable fetal deaths, and many maternal deaths; that its use explains a large part of the continued high morbidity among the mothers and babies, puerperal infection, and cerebral hemorrhage. It should never be used in normal labor before delivery. If given for weak pains, the dose should be from one and a half to two minims, and the effect watched closely, with an ether can in the hand. It should not be used in placenta previa; old multiparae; cesareanized women, or any in whom the integrity of the uterus is questionable. . . . . ."

LEGISLATIVE NOTES

The Governor has submitted his annual message. The House and Senate have organized and committees are already at work considering bills. The bill of the Recess Committee appointed to consider matters relating to medical schools, medical education and the various forms of registrations which was reported to the last legislative committee came to naught, except that a few provisions, especially that relating to the appointment of members of the Board of Registration, were referred to the next General Court. This applies to the present requirement which restricts the Governor to less than a majority representation of any one medical society on the Board of Registration in Medicine and to enlarge powers of the Board of Registration. Oppositions have developed to these changes in the law apparently based on the fear that some one society may have a dominating influence through its representation on this Board.

The Committee of the Massachusetts Medical and the Massachusetts Homeopathic Societies has submitted a bill which provides that the Department of Education shall during any calendar year make such investigations and inquiries as it deems proper into the equipment of and instruction given in medical schools the graduates of which appear for examination for registration. The Board of Education may call upon the Department of Registration in Medicine for assistance in their investigations and inquiries. The Department of Education may make recommendations to the Dean of any medical school regarding the equipment of and instruction given in such school and may make special reports to the Governor of the Commonwealth and shall include in the annual report of the Department such findings and recommendations as in its judgment may be necessary to improve the efficieney of any medical school.

The bill, House 343, to restrict the administration of anaesthetics to registered physicians has been referred to in a previous issue.

The Board of Dental Examiners in House 100 asks for a revision of the application fees for registration making the original fee $25 and after one rejection subsequent examinations may be taken for a fee of $15, and in House 101 recommends local registration.

The Board of Registration of Nurses in House 138 asks for authority to apopint an educational director and in House 139 asks to have the registration fees raised to $10. Both of these bills have been heard and the committee reports no legislation necessary.

The Commissioner of Public Health in House 145 would amend the present law to read:

Every town placing its patients suffering from tuberculosis in a county, municipal or incorporated tuberculosis hospital in the Commonwealth, or in a building or ward set apart for such patients by a county, municipal or incorporated hospital therein, shall be entitled to receive from the Commonwealth a subsidy of five dollars a week for each patient who has a legal settlement therein, provided that such patient is unable to pay for his support, and that his kindred bound by law to maintain him are unable to pay for the same; but a town shall not become entitled to this subsidy unless, upon examination authorized by the department, the sputum of such patient be found to contain bacilli of tuberculosis, nor unless the hospital building or ward be approved by it, and it shall not give such approval unless it has by authority of law, or by permission of the hospital, full authority to inspect the same at all times. The department may at any time withdraw its approval. In the case of hospitals having a bed capacity which, in the opinion of the department, is in excess of the number of beds needed for the localities which these institutions serve for patients exhibiting tubercle bacilli in their sputum, the subsidy above provided shall be allowed for such patients not exhibiting tubercle bacilli in their spu-

tum as, in the joint opinion of the superintendent or medical director of the institution and of a member of the department designated by the commissioner, are bona fide cases of pulmonary tuberculosis and have been in the institution more than thirty days.

House 386 provides for the extension of vaccination to pupils in private scohols. This is the bill which Dr. S. B. Woodward has advocated for several years.

House 426 provides for restriction of the sales of veronal, bartuturis and barbital.

House 427 advocates the establishment of a State Hospital for the treatment of cancer.

House 306 provides for the creation of a Division of Preventive Medicine under the State Department of Public Health to read as follows:

SECTION 1. There is hereby created a division of preventive medicine under the department of public health.

SECTION 2. The commissioner shall appoint a director and an assistant director of the division of preventive medicine, in the manner and subject to provisions governing directors of divisions under chapter seventeen of the General Laws.

SECTION 3. There shall be established a state health fund in the manner and for the purposes hereinafter provided, under the supervision of a state health fund board which is hereby created as a division under the department of public health.

SECTION 4. The board shall be composed of three members, the commissioner of public health and two others. The commissioner shall be its chairman. The two other members who shall be appointed by the governor may receive such salaries as may be fixed by the governor and council.

SECTION 5. The board shall administer the state health fund. It shall investigate the claims for compensation under this act, determine the amounts of such compensation, and order the payment of same from the fund. It shall approve and order the payment of such bills as are submitted to it by the director of the division of preventive medicine for professional and other services, including drugs, rendered under this act.

SECTION 6. The commissioner of public health shall appoint from among the registered physicians, surgeons, alienists, dentists, oculists, etc., residing and practising in the state of Massachusetts, hereinafter called sanitarians, who shall elect to accept and submit to the provisions of this act, as large a number as may be necessary for carrying out the purposes and provisions of this act.

SECTION 7. Sanitarians shall examine (physically, mentally, and in other ways known to science) contributors and their dependents residing within their districts for the purpose of preventing or remedying infirmity, disease and sickness of any kind to the human body; they shall render assistance to contributors and their dependents in all cases of infirmity, disease, childbirth and accident when called upon to do so, to the extent and in the manner as their knowledge of a particular branch of the science of human health has made them proficient; and they shall refer such cases in the handling of which they are not proficient to a sanitarian who is, or to an institution or hospital provided for the treatment of such cases. Sanitarians shall coöperate with a view to the establishment of perfect health among the contributors residing within their districts, by preventive measures rather than cure.

SECTION 8. Sanitarians shall be employed on full or part time as needed, at suitable salaries to be fixed by the commissioner and council, payable from the fund.

SECTION 9. Sanitarians shall report their transactions to the director of the division of preventive medicine whose duty it shall be to supervise and promote the work of the sanitarians in accordance with rules and regulations established by the commissioner and council.

SECTION 10. Citizens and residents of the state of Massachusetts who shall elect to accept the provisions of this act and who have contributed towards the maintenance of the state health fund as hereinafter provided for a period of not less than three months, shall be known as "contributors" and shall be entitled to the following benefits hereunder, for themselves and wholly and partly dependent members of their families and households, to wit:

(*a*) Periodic physical examinations; medical and surgical consultations, treatment, operations, childbirth, including nurse when necessary; hospital and clinical care and treatment, including transportation to and from same if necessary; drugs and medical and surgical supplies, including artificial limbs and appliances.

(*b*) When sickness or incapacity extends beyond seven days and is accompanied by the loss of income or earnings, or if the patient be a woman by the loss of her services in the home, contributors shall be entitled to receive compensation from the fund, as follows:

While the loss of income, earnings or services is total, a weekly compensation equal to two thirds of the patient's customary weekly income, earnings or value of services before the sickness or accident, but not more than sixteen dollars nor less than seven dollars a week.

While the loss of income, earnings or services is partial, a weekly compensation equal to two thirds of the difference between the patient's weekly income, earnings or value of services before and after the sickness or accident.

If the patient be a woman whose services, while not paid for in cash, are nevertheless indispensable in the home of a contributor, her services shall be valued at one thousand dollars per year and her compensation for sickness, accident or childbirth shall be computed on that basis.

Provided, however, that none other than contributors with families or relatives dependent upon his or her income, earnings or services shall be entitled to compensation hereunder while the contributor is in a hospital where full maintenance is furnished.

(*c*) In case of the death of a contributor, his wife, or a dependent member of the family or household, the fund shall pay the reasonable expenses of burial, not exceeding one hundred and fifty dollars.

SECTION 11. Contributors and their dependents shall submit to physical and such other examinations at regular intervals as the sanitarians of their district may order in accordance with rules established by the department of public health, for the purpose of creating and maintaining a condition of perfect health among the contributors.

SECTION 12. If a contributor be entitled to compensation under any federal law or under any law of this state or of any other state, territory, or district of the United States, or of any foreign country or province thereof, he shall not be entitled to compensation under this act for the same disability.

SECTION 13. The money needed for maintaining a solvent state health fund shall be obtained in the following manner:

Fifty per cent shall be obtained by assessing incomes from investments, business or profession, salaries, wages and hire of any description of all citizens and residents of the state of Massachusetts who shall elect to accept and submit to the provisions of this act. In the case of salaries, wages and hire, employers shall collect the assessments and remit the same

to the fund, issuing state health fund receipts therefor.

Fifty per cent shall be paid from the state treasury.

SECTION 14. Temporary non-payment of contributions to the fund shall not jeopardize a contributor's right to benefits under this act provided such temporary non-payment is due to sickness or involuntary unemployment.

SECTION 15. The treasurer of state shall be the custodian of the state health fund and shall disburse therefrom such sums and to such persons, organizations, associations or institutions as may be ordered by the board.

SECTION 16. The department of public health may incur preliminary expenses for the purpose of acquainting the citizens of the commonwealth with the provisions of this act and the establishment of the necessary organization hereunder. Such expenses shall be paid from the state treasury and shall not exceed in amount the sum of one million dollars.

SECTION 17. This act shall take effect upon its passage.

House 199 provides that whenever a person is arrested for operating a motor vehicle while under the influence of liquor if he so requests shall be examined by a physician who shall file a report of such examination with the court or magistrate before such person is arraigned.

House 249 seeks to have the town of Erving transferred from the eastern to the northern Medical Examiner's District of Franklin County.

Several reports submitted by the Commissioner of Public Health deal with sewer extensions and sewage conditions in the Valley of the Aberjona River, the disposal of garbage, waste and other refuse and the sanitary condition of Spy Pond in the town of Arlington, but although the reports give valuable suggestions no bills relating to these subjects are submitted.

The Committee on State and National Legislation will give specific information about legislative matters to any physician who may be interested.

MISCELLANY

TRANSACTIONS OF THE TRUDEAU SOCIETY OF BOSTON

THE SEVENTH OR ADJOURNED ANNUAL MEETING OF THE TRUDEAU SOCIETY OF BOSTON WAS HELD DECEMBER 8, 1925, AT THE BOSTON MEDICAL LIBRARY

THE meeting was called to order by President, Dr. Cleveland Floyd, at 8.15 P. M. Nominations for membership in the council for the ensuing year were: Dr. L. B. Morrison, Dr. Sumner H. Remick, Dr. Frederick Lord. They were elected. Dr. Frederick O'Brien was elected for membership in The Trudeau Society.

A motion was made by Dr. Vincent Y. Bowditch that a committee of three be appointed to take up the matter of the smoke nuisance in the City of Boston. The committee is composed of Dr. Vincent Y. Bowditch, Dr. Sumner H. Remick, and Dr. George S. Hill.

Dr. John B. Hawes, 2nd, was then introduced by the chair, and read a very concise, suggestive paper on Hilum Tuberculosis, which appears in this issue.

Discussion was opened by Dr. Henry D. Chadwick, of the State Sanatorium at Westfield, who was followed by George W. Holmes. Dr. F. H. Hunt then spoke of the clinical characteristics of Hilum Tuberculosis from the treatment. Dr. R. D. Leonard then gave a series of X-ray plates on the anti-diagnostic view-point as to the relative value of X-ray and diagnosis of Hilum Tuberculosis. This stimulated considerable discussion which was accentuated by the introduction and comments by Dr. Chadwick of a series of X-ray plates which he had produced on Hilum Tuberculosis.

Dr. H. C. Stuart, of The Children's Hospital, at this point made some inquiries relative to the value of intradermal tuberculin test.

Dr. B. M. Fried then came forward and gave a review of the early pathology of tuberculosis and followed it through to the present day knowledge, quoting a large number of authorities for his belief in hilum tuberculosis both in child and adult. He also spoke at length on Hilum Nodes as point of origin in Pulmonary Tuberculosis. He also presented several photographs to support his evidence of tuberculosis infection.

Dr. Edward O. Otis then gave a series of constructive comments on Dr. Hawes' paper.

Dr. Hawes then took up the various comments on his paper, and expressed himself as surprised at the general agreement with the facts presented in his paper, as well as the persistent harmony of the meeting.

There were eighty-five physicians present. The meeting adjourned at 9.57 P. M.

GEORGE S. HILL, *Secretary.*

CONNECTICUT STATE DEPARTMENT OF HEALTH

WHAT WAS 1925 WORTH?

ON the threshold of the New Year one's steps naturally linger over the last days of 1925 while the events of the past year pass in review. Was it a successful year in point of accomplishment? What contribution did our efforts make? Is there an encouraging note of progress as the new year starts? Do we feel healthfully equal to the task ahead in 1926? Those and many other questions crowd in on our consciousness.

On the whole the prospects for 1926 look bright, judging from some of the high lights that have marked the year just passed.

As the year closes it would seem that the cases reported for most of the diseases will be below the average and for such diseases as typhoid

fever, tuberculosis, smallpox, diphtheria, encephalitis, poliomyelitis and scarlet fever, it will be below the total number of cases reported for 1924.

During the year there has been no outbreak of disease involving a municipal water supply and conditions in regard to disposal of sewage in the state has improved over the preceding year. There has been an increasing demand of the people to eliminate existing nuisances and improve the standard of meat that is being sold as food. The supervision of the production of oysters has been eliminating oysters which are taken for market from polluted beds.

The laboratories of the department have been increasingly used during the year and the total number of specimens examined will be the greatest number for any year.

Due to the monthly check system for venereal diseases there has been an increase in the number of physicians reporting and in the number of cases reported. Additional assistance was rendered the clinics through the follow-up work by a field worker. Three additional treatment stations were established in South Manchester, Norwich and Danbury making a total in the state of sixteen treatment stations and six clinics.

For the first ten months of 1924 there were 214 deaths due to automobile accidents. The corresponding months for 1925 witnessed an increase of 48 bringing the total deaths due to this cause to 262. This increase of 48 is of more than statistical significance. Apparently there are still many who take a chance; 262 have taken their last chance.

There has been a great demand for well child conferences in sections of the state where no nursing service is available, or to assist local nurses; 5,950 children are now enrolled, and come regularly to the forty-five conferences.

Seventeen new conferences were added to the list during the year, making a total of 45 now in operation.

Many public health nursing associations have expanded during the year and now employ additional nurses. East Hampton, and Westport were new towns to organize public health nursing associations, making a total of 87 towns who now enjoy this service. Bethel, Moodus Village and Durham are planning ways and means to supply this service.

Nearly one hundred towns in the state were supplied with some special form of health service. Thus health instruction was spread by means of moving picture films, stereopticon slides, posters and exhibits. Over two hundred talks were given covering every phase of health. Many of these were illustrated by films, slides or posters. Health exhibits were sent into some twenty-five towns, the health tent being set up at twelve of the agricultural fairs. Upwards of one hundred and fifty thousand people have thus received some form of educational health message not including radio talks and regular field service.

ONE MORE FRAUD

The Connecticut State Department of Health reports that two tiny pill bottles were received which bore these inscriptions:

Germ Destroyer No. 1 Relieves headaches, Cold in Head, Catarrh, Neuralgia, etc. Price 50 cents.

Inhale night and morning.

Germ Destroyer No. 2 Relieves Sore Throat, Bronchitis, Catarrh, Asthma, etc. Price 50 cents.

Inhale through mouth, night and morning.

Clinging close to the inner surface of the bottles is some dark colored gauze, evidently saturated with the material which works such wonders, a small supply of which occupies one half inch in the bottom of the bottle.

This interesting exhibit, evidence that some of the old notions of the dark ages still persist, was sent by a health officer with the statement that a woman salesman went through the town selling these bottles at one dollar a set. It is difficult to protect the public from such fraud if they are foolish enough to buy. *But* when the selling argument is clinched by the assurance that the State Department of Health endorses it, it is time to protest, and state once again that diseases are not cured by such charlatan methods.

WORLD HEALTH CONDITIONS AS REVIEWED IN THE ANNUAL REPORT OF THE SURGEON GENERAL OF THE UNITED STATES PUBLIC HEALTH SERVICE

THE Secretary of the Treasury has transmitted to Congress the Annual Report of the Surgeon General of the United States Public Health Service for the fiscal year ending June 30, 1925. This document is of particular public interest, constituting as it does a yearly accounting of the Nation's most valuable possession, its health.

Surgeon General Cumming repeats the warning he gave last year as to the danger of the lowering of standards of health in the United States which may possibly result from over confidence and relaxation in vigilance in public health work. He also points out the fact that a material increase in the population produces a marked tendency to a more than corresponding increase in sickness and death, and states that this increase will surely follow unless rational, proportionate measures are enforced to prevent it. Had we not learned how to pre-

vent, in great measure, many of our communicable diseases, and were we not provided with the means of applying known preventive measures, our population would be swept from time to time by epidemics, which because of our present congestion, and better facilities for rapid transportation, would make past epidemics seem mild in comparison. The people of the United States, in so far as the national health is concerned have grown into a body-compact comparable to the human body, no member of which can suffer without affecting the well-being of all.

With the coöperation of the State Department, State and local health authorities and other agencies, the Public Health Service has developed a very comprehensive system for the collection of world statistics of disease, which, the Surgeon General says, however, is capable of much greater development.

The most important event in the field of international health relations during the fiscal year was the signing of the Pan American Sanitary Code by eighteen of the American republics at Havana, Cuba, on November 14, 1924. This pact provides for the collection and distribution of information concerning the prevalence of communicable diseases and prescribes and standardizes the measures necessary to prevent their transmission from one country to another. By its terms, the Pan American Sanitary Bureau is made the central coördinating sanitary agency of the republics of the Pan American Union. To date, the Code has been ratified by the United States, Costa Rica, Cuba, Chile and Peru, and its acceptance by the other signatory countries is expected in the near future.

In spite of the fact that United States seaports are, through maritime commerce, in constant communication with ports infected with plague, and often with cholera and yellow fever—dreaded plagues of a few years ago—there was no importation of these diseases or of other major quarantinable disease during the year, though both human and rodent plague were detected on vessels arriving in quarantine.

For almost the first time in the history of United States quarantine, there was no detention of ships' passengers or crews on account of yellow fever. A few cases of this disease were reported from El Salvador, Central America, from three countries in South America, and also from the Gold Coast and Nigeria in Africa. The fact that the incidence of yellow fever has at no time in its recorded history been so low is very gratifying. Surgeon General Cumming points out, however, that until it is completely eradicated from the earth, yellow fever will remain a grave potential danger.

Contrasting the relative freedom from the major quarantinable diseases (smallpox excepted) which we nonchalantly enjoy in this country, and emphasizing the protection which the quarantine service and the application of the principles of modern health measures give us, are certain figures from reports of foreign countries. Although these data are said to be, in most instances, incomplete and often fragmentary, they are nevertheless astounding to us in this country who rarely hear of some of the diseases mentioned.

Cholera was reported in many parts of Asia, but with the exception of eight cases in European Russia, this disease was not reported from other countries. India reported more than 276,000 deaths from this disease during the calendar year 1924. This is nearly four times the number reported for 1923.

In spite of the fact that the measures for preventing smallpox are well known and very effective, this disease continues to be widespread and destructive. Incomplete reports from 62 countries included 218,000 cases and more than 50,000 deaths from smallpox during the calendar year 1924. The same countries reported 165,000 cases of smallpox and more than 45,000 deaths during 1923.

The warning issued by the Surgeon General in July 1924, regarding the menace of smallpox in the United States proved amply justified, since reports from 35 States for the calendar year 1924 showed an increase of 75% in the number of cases and 628% in the number of deaths as compared with the year 1923. The smallpox case-rate in the United States is at present, according to reports received, the highest of any civilized country in the world. It may be said however that much of the disease is of a mild type and in some countries many of these cases would be classed as "alastrim." It is also believed that smallpox is better reported in the United States than in most other countries. Eleven cases of tetanus, most of them fatal, occurred in the United States during the year as a result of the use of bunion pads as vaccination dressings. Efforts are being made to induce physicians to follow a standard technique when vaccinating, and warnings were issued against the use of shields and bunion pads as dressings.

Bubonic plague has been widespread throughout the world for many years. During 1924, reports of this disease were received from 49 countries, including cases in many important ports and shipping points. More than 400,000 deaths from plague were reported in Asia, and there is little doubt that many more occurred. Nine countries in the Western Hemisphere reported plague including the United States. The ever present menace of plague has been frequently emphasized in previous annual reports of the Surgeon General. Rodent plague re-appeared for a short time in New Orleans, Louisiana, and in Oakland, California. In both instances, the Public Health Service was

asked to assume direction of measures for its suppression and did so at once. No human cases occurred either in New Orleans or in Oakland.

There was an outbreak of plague in Los Angeles, California, in which there occurred 33 cases of pneumonic plague with 31 deaths and 8 cases of the bubonic type with 3 deaths during the fiscal year. Both rat and squirrel plague were also found to exist. The Public Health Service assumed charge of plague suppressive measures in Los Angeles just before the close of the fiscal year.

The occurrence of rodent plague in New Orleans, La., and Oakland, California, and of human and rodent plague in Los Angeles, California, made it necessary for a time to put into effect outgoing quarantine measures in these cities to prevent the infection from being carried to other States and to foreign countries.

Thanks chiefly to our State and local health officers, general health conditions in the United States continued good. Preliminary figures indicate a total death rate for the United States for the calendar year 1924 of about 11.9 per 1,000 as compared with 12.4 in 1923, with 17.6 in the registration area in 1900 and with 19.8 in 1880.

Birth rates in 25 States show an increase from 22.3 per thousand population in 1923 to 22.5 in 1924. The rates varied from 31.6 in North Carolina to 16.1 in Montana.

While infant mortality has shown an appreciable decrease, the number of deaths of mothers incident to childbirth has shown but little change in the last nine years for which data are available. During the period from 1915 to 1922 inclusive, it is estimated that for every 100,000 babies that were born, the lives of from 600 to 900 mothers were sacrificed. About one-third of these deaths were caused by infection of the mother at childbirth, often the result of carelessness on the part of the attendant.

Attention is called to the increasing number of death and inuries from the operation of automobiles. The death rate from this cause has risen from less than 1 per 100,000 in 1906 to nearly 15 per 100,000 in 1923, or more than 16,000 deaths per year.

Reports from 36 States show that 111 persons were killed and 1,030 injured as the result of celebrating with fireworks the Fourth of July, 1925. Of the injured, 148 will probably lose the sight of one or both eyes. In many cases, injury or death was due to fireworks considered harmless, such as sparklers, blank cartridges, cap pistols, sky rockets, small firecrackers and Roman candles. The publicity campaign carried on by the physicians and the press of the United States against the use of fireworks on the Fourth of July had been almost discontinued as it was thought that warnings were no longer required. The campaign should be renewed.

Heart disease ranks first in the United States as a cause of death, and its incidence is steadily increasing. Influenza and pneumonia combined occupy the second place.

The diphtheria death rate has shown a striking fall from 43.3 per 100,000 in 1900 to 12.1 in 1923. "If parents could be induced to protect their children by the use of the 'toxin antitoxin' process of immunization," says Surgeon General Cumming, "there is no reason why diphtheria might not be still further greatly reduced or even exterminated."

Lethargic encephalitis (sleeping sickness) is apparently increasing in the United States at the present time. In 1923, nearly 2,000 deaths were reported. Data are unsatisfactory, due to imperfect or incomplete reports.

Malaria is stated to be inadequately reported. There are many sections that are relatively free from this disease, while in many others it is still a serious health problem. The rates are higher among the colored than among the white population. Active work in coöperation with State and local health authorities in the effort to combat this disease continues to be carried out.

The death rate from measles has shown but slight change during the last quarter of a century. The inability to control measles, Surgeon General Cumming attributes, in great measure, to the fact that there usually elapses a period of about four days from the time of the appearance of the initial symptoms to the time of the appearance of the eruption. Measles is communicable during this stage. The child is not infrequently at school during a part of this time. Many mild cases are never seen by a physician and are never reported. Failure to enforce quarantine measures during the preeruptive stage and failure to isolate unrecognized or unreported cases greatly increase the opportunity for its spread. More rigid school inspection, with the exclusion from school of children who have fever, colds, or who are otherwise indisposed, would remove from contact with other children many incipient cases. Recent scientific research suggests the possibility of producing an immunizing process in this disease.

Although scarlet fever has shown a slight increase in the number of cases reported in 1923 over 1924, the death rate has correspondingly decreased. It is believed that this apparent increase in the number of cases is due to better reporting of the disease.

Little progress has been made in the control of whooping cough during the last 25 years. It is a disease that particularly affects children, especially very young children. One-half of the deaths caused by whooping cough occur in

children under one year of age and 94% in those under five years of age. The education of parents with regard to the extreme danger of whooping cough in very young children is strongly advocated.

The death rate from tuberculosis in the registration area (all forms) dropped from 201.9 per 100,000 in 1900 to 93.6 in 1923. Reports from 35 States having a population of nearly eighty-eight and one-half millions give a death rate of 88.6 for the calendar year 1924.

It is pointed out that at the beginning of the present century the control of typhoid fever seemed almost as hopeless as does the control of measles or influenza at the present time. The application of measures for the purification of water and milk supplies, the exercise of vigilance in protecting other foodstuffs, with prompt recognition and treatment of cases and supervision of carriers, have given a most striking object lesson in the result of intelligent effort applied to the protection of the public health. The typhoid death rate has decreased from 35.9 per 100,000 population in 1900 to less than 7 per 100,000 in 1924. In the original registration area, the typhoid rate dropped from 31.3 in 1900 to 3.6 in 1923 and provisional figures for 1924 indicate that there was no rise in these States for the latter year. It must be said, however, that reports for the first half of the calendar year 1925 indicate that typhoid fever rates for 1925 may exceed those of 1924.

Studies of Malta fever indicate that there are two types of the disease to be found in the United States. One of these types is responsible for very considerable losses in cattle, but is apparently not readily transmitted to man. The other type is readily transmissible to man through the milk of goats.

A study of the vital statistics from 1900 to 1923 shows a marked increase in the number of deaths caused by cancer in the original registration States. During the same period, the death rate from diabetes has almost doubled.

"The importance of milk as a food and the danger that it may convey disease cannot be overestimated," says Surgeon General Cumming. The widest variance has existed in the methods adopted by State and city health authorities to secure a safe and wholesome milk, hardly any two States or cities attacking the problem in just the same way. An attempt is being made to unify measures for the safeguarding of this important food. At the close of the fiscal year 1925, eight States and fifty-three cities had adopted uniform measures for the sanitation of milk.

Studies in Child Hygiene have continued to emphasize the importance of the correction of abnormal conditions found at the school age, such as defective vision and teeth, diseased tonsils, and adenoids. It is estimated that sickness causes the child to be absent 4% of the possible days of school attendance, the common cold being the most frequent cause of absenteeism.

During the winter of 1924-1925 an excessive prevalence of typhoid fever was noted in certain cities. In one of these cities, the authorities attributed this increase to infected oysters. The publication of this statement throughout the country before the exact source of the oysters was determined led to a marked falling off in the use of oysters and resulted in a considerable financial loss to the oyster producers and workers. The Public Health Service conducted a thorough investigation, definitely traced the infection to shell oysters, and located the distributing point from which the infected oysters came, thereby relieving the whole trade of suspicion and protecting other distributors. The Surgeon General called a conference in the interests of both the public and the oyster producers and resolutions were adopted to serve as a basis for the permanent supervision of the sanitation of shellfish, the details of which are being developed by a committee appointed for the purpose. Congress made an appropriation of $57,600 for this work. The end result will no doubt be better protection for both producer and consumer.

Other important investigations were effected by the Public Health Service, of goitre, drug addiction in its relation to crime, nutrition, "sano-crysin" (the so-called "gold-cure" of tuberculosis), and in industrial hygiene, the latter including research on the manufacture and use of tetra ethyl lead, an ingredient used in "high power" gasolines. Of particular interest are the tests of material for use in the treatment of scarlet fever, as these have to be performed on human beings, animals not being suitable for these experiments.

An office has been established for the purpose of supplying health officials with information on current practices in their line of work. This endeavor is allied with the continued study of municipal health department activities.

The Public Health Service has continued to supply medical attendance and services of various kinds to the United States Coast Guard, Employees' Compensation Commission, Civil Service Commission, Bureau of Pensions, Light House Service, Shipping Board, Steamboat Inspection Service, Veterans' Bureau, Mississippi River Commission, Bureau of Immigration and the Prohibition Unit. The number of merchant seamen, the principal beneficiaries treated, exceeded that of any previous year, as did the total amount of all relief furnished. It costs the Public Health Service $3.80 per day to care for each patient in hospital as compared with $4.08 in 1923.

The National Leper Home at Carville, La.,

cares for 259 patients, while about 400 tuberculous seamen are treated in the marine hospitals at Fort Stanton, N. M.

The campaign for the control of venereal diseases was continued along the lines of the three-fold plan of (1) educational measures, (2) legal measures, and (3) medical measures. In the field of legal measures, progress has been very satisfactory. It is also gratifying to note that many State Boards of Health now have a permanent program of venereal disease measures incorporated with their other public health activities.

Interesting figures furnished by the Bureau of the Census are given on institutional care and custody in the United States. During 1922, the last year for which data are available, there were 78,070 persons cared for in almshouses and 348,174 persons treated in hospitals and like institutions for the insane, the feeble-minded, and epileptics, while records show that 400,000 persons go out from State and Federal penitentiaries annually. The Surgeon General invites attention to the fact that many of the inmates of the almshouses and institutions for the insane and feeble-minded are in those institutions as a result of preventable disease.

DEAD-BIRTHS

THE Surgeon General of the Public Health Service, Washington, has addressed a letter to the Massachusetts Medical Society asking for comments on the following report of a committee of the League of Nations on the definition of the term "dead-births." He will be glad of any communications addressed to him at 16 Seventh Street, S. W., Washington, D. C.

EDITOR.

HEALTH ORGANIZATION OF THE LEAGUE OF NATIONS

Geneva, April 1st, 1925.

REPORT OF THE COMMITTEE STUDYING THE DEFITION OF DEAD-BIRTHS

The need of a definition of the term "dead-birth"* has been considered on many occasions by conferences and committees, national and international. A summary of their conclusions will be found in the Appendix to this report.

It does not appear to the Committee to be necessary to emphasize the urgent need of an international agreement as to the meaning to be attached to the term "dead-birth," as such need is universally recognized. It will suffice to observe that, without an agreed definition and without uniform rules as to the tabulation of births, international comparability of statistics of fecundity (birth-rates) and of infant mortality (at ages under one year) cannot be attained.

In drafting the proposed definition of "dead-birth," the Committee has kept in mind the fact that the suggested definition is intended for the guidance of those concerned with the registration of births and for that of statisticians—not of jurists. It is permissible, however, to hope that, if international agreement be arrived at, the definition, whatever its final form may be, will be accepted for all purposes.

Owing to the fact that, in a large proportion of instances, lying-in women are attended by midwives or by women untrained in midwifery or medicine, it is essential that the proposed definition should be based on a test which is easy of application by persons possessing little or no medical knowledge or skill. Fortunately, this condition is fulfilled by the test of respiration—a test not only scientifically accurate but obvious even to the untrained observer.

The definition of dead-birth now submitted involves the consideration of certain points in foetal physiology and of certain terms expressive of those points:

(a) *Foetus.*—Foetal existence is *intra-uterine* existence and is maintained by placental respiration. Infant existence is, on the other hand, *extra-uterine* existence and is maintained by pulmonary respiration.

It is of extreme importance to define clearly the end of foetal existence—a task which is not difficult. A foetus becomes an infant as soon as it has breathed, or, more precisely, as soon as its existence depends on oxygen obtained from its lungs and not on that obtained from the placenta. The transition from foetus to infant is a metamorphosis, which is determined by the establishment of pulmonary respiration.

Foetal existence, in relation to its environment, passes through three stages:

(1) In the quiescent uterus, during pregnancy, a long *ante-natal* stage;
(2) In the active uterus, during labour, a short *intra-natal* stage;
(3) After birth, a transient but variable *post-natal* stage before the establishment of pulmonary respiration announces that foetal existence has ended and that infant existence has commenced.

The stage of post-natal foetal life deserves careful notice, for around it has gathered the confusion and controversy about the definition of the terms "live-birth" and "dead-birth." In most cases this stage is a transient one, and pulmonary respiration is established almost simultaneously with birth, that is: the foetus becomes an infant directly or almost directly it

*This term is used here in preference to "still-birth," as it is more in accordance with the phraseology of the most recent English and American text-books on midwifery. Again, the term "still-birth" is used by English writers and obstetricians as the equivalent of the Latin term "asphyxia neonatorum," of the French "mort apparente de nouveau-né," and the German "Scheintod." Lastly, "dead-birth" can mean nothing else but the birth of a foetus which is not transformed into a living child.

is born. But in other cases this stage is more prolonged and may even be delayed for as long as half an hour. In such cases the heart of the foetus is beating, but the foetus makes no movement; it may be rigid and blue, or limp and white. In England, the names "asphyxia of the new-born, blue or white" (or still-birth) is given to this condition; in France, it is termed mort apparente du nouveau-né; in Germany, "Scheintod." Sooner or later, the foetus begins to breathe spontaneously, but sometimes the methods of artificial resuscitation have to be employed.

(b) *Foetal death.*—The foetus dies when its heart ceases to beat. Foetal death may occur at any of the three stages of its existence:

(1) Death during pregnancy—ante-natal foetal death; these foetuses are in most instances macerated when born (the cause of death is usually some maternal or placental disease).

(2) Death during labour—intra-natal foetal death; these foetuses are not macerated. The heart is not beating at birth (the common causes of death are intra-cranial injury, prolonged labour, prolapse of cord, separation of placenta, etc.).

(3) Death after labour—post-natal foetal death (the common causes are severe head injuries due to difficult labour). At birth the heart is beating and continues to beat for a variable period, sometimes as long as for half an hour, before death occurs. *There is no attempt at respiration; the foetus dies as a foetus; it has never become an infant.* Methods of resuscitation are always tried in these cases (artificial respiration, etc.). Post-mortem examination shows that these foetuses, with very rare exceptions, have severe intra-cranial injuries (tears of the *tentorium cerebelli* and cerebral haemorrhage).

(c) *Viability.*—In proposing that a gestation of not less than seven months (twenty-eight weeks) shall be the term of development required for a "viable" foetus, the Committee has had in mind the very great difficulty of rearing an infant born after a shorter period of gestation. It is hardly too much to say that the survival of an infant born before the end of the twenty-eighth week of pregnancy is an event worthy of special record. It is rare, except when special facilities—e. g.: provision of an incubator—are available. The adoption of the Committee's proposal will not mean that the birth, at an earlier stage of gestation, of a foetus in which pulmonary respiration becomes established is not to be regarded as a "live-birth" (as hereafter defined); but it will mean that a birth before the end of the twenty-eighth week of pregnancy of a foetus in which respiration is not established is not to be counted as a "dead-birth" but as a miscarriage" (abortion).

Where registration as a dead-birth is required in the case of a shorter gestation than 28 weeks—e. g.: Switerland (six calendar months), Japan (four months)—the adoption of the Committee's proposal need involve no change in legislation. In such instances, only those births which take place after the twenty-eighth week of gestation should be included in the principal (international) tabulation. Supplementary tabulations for national purposes could be given, showing the number of births occurring after gestations shorter than twenty-eight weeks.

PROPOSED DEFINITIONS

It is requisite, in drafting the desired definition, to have a clear understanding of what constitutes a "birth" and when such "birth" is "complete."

In the proposed definition, the word "birth" means the separation and extrusion of a foetus from the body of the parturient woman. The birth is to be deemed complete at the instant when the whole of the body of the foetus—head, trunk, and limbs—is outside the body of the mother.

The birth is to be deemed a live-birth if, after birth (as defined above), the infant breathes.

The act of respiration is incontrovertible evidence of life, and its continued absence is to be taken as proof of foetal death.

It is desirable, for statistical purposes, that a distinction should be made between the birth of a foetus which can normally be expected to be capable of an existence independent of its mother and the expulsion of one which cannot, births in the latter category being regarded as miscarriages (abortions).

A foetus capable of an independent existence is a "viable foetus" and is the product of a gestation which has lasted at least twenty-eight weeks. Such foetus will normally measure at least 35 cm. from the crown of the head to the sole of the heel, the body being fully extended. We are of opinion that the latter criterion is the more trustworthy.

Hence, a "dead-birth" is the birth of a foetus, after twenty-eight weeks' pregnancy, in which pulmonary respiration does not occur; such a foetus may die either: (a) before, (b) during, or (c) after birth, but before it has breathed.

SUGGESTIONS AS TO THE RECORDS TO BE KEPT

It is desirable that every live-birth should be entered in the Register of Births. An infant born alive but dying before registration of its birth should be entered both in the register of births and in that of deaths, the prescribed certificate of cause of death being produced at the time of registration or subsequently thereto, as may be by law directed.

It is desirable that every dead-birth should be inscribed in a Record of Dead-Births. The person responsible for the registration should be required to produce, whenever possible, a certificate of cause of death, such certificate to be signed by a recognized medical practitioner. The information to be given in the certificate and the form thereof should be prescribed by the competent authority.

In countries requiring the registration of birth of non-viable foetuses (as defined above), such births should, we consider, be entered in a separate record, with such information as to duration of pregnancy, cause of abortion and other particulars as may be prescribed by the competent authority.

RULES FOR COMPILATION OF STATISTICS

Statistics of *natality*—birth-rates—will be based on the number of live-births.

Statistics of *fertility* will be based on the number of *viable* births, both live and dead-births.

Rates of *infant mortality* will be based on the numbers of live-births and of deaths of infants under the age of one year (12 months).

In concluding its report, the Committee desires to represent to the Health Committee of the League of Nations the need of a list of causes of dead-births for international adoption and use.

Geneva, March 24, 1925.

REGINALD DUDFIELD,
O.B.E., M.A., M.B. (Chairman),
EARDLEY L. HOLLAND,
M.D., F.R.C.S., F.R.C.P.;
M. HUBER,
MARCEL NEY,
T. H. C. STEVENSON, C.B.E.

RECENT DEATHS

PARKER—DR. FRANK HOWARD PARKER, former superintendent of the Massachusetts Leper Colony on Penikese Island, died at his home in Hamilton, Montana, January 10, 1926, of heart disease and an attack of whooping cough.

Dr. Parker was born in Portland, Me., in 1855, and moved with his family to East Boston while a boy, after the death of his father, Captain William W. Parker, in China. He was educated in Boston schools and after a short business career took his M.D. at the Boston College of Physicians and Surgeons, in 1891, and later started a practice in Malden. He remained in Malden 23 years and for several years was chairman of the Board of Health.

In 1907 he and Mrs. Parker, formerly Miss Marian E. King of Malden, went to Penikese to take charge of the State leper colony there. Dr. Parker built up the hospital and the colony at the island and made considerable headway in combating the leprosy, on which he was regarded as an authority. When the colony was abandoned in 1921, and the lepers removed to Louisiana, Dr. and Mrs. Parker went to Montana.

Dr. Parker was a member of the Massachusetts Medical Society, Temple Lodge of Masons in East Boston, William Parkman Commandery of the same district, and of the Knights of Pythias.

He is survived by his widow, a brother, William F. Parker of West Kennebunk, Me., and two sons, Dr. Ralph Parker, State entomologist of Montana, and Howard K. Parker of England.

HUBBARD—DR. HALBERT CHARLES HUBBARD, assistant superintendent of the Rutland State Sanatorium for the past eight years, died at Rutland, January 8, 1926, at the age of 43. He was a graduate of Boston University School of Medicine in 1906.

THOMPSON—DR. FRED THOMPSON, a graduate of Harvard Medical School in the class of 1888, died suddenly at Orleans, Mass., aged 61, January 7, 1926.

LANE—DR. ROBERT LOW LANE, a graduate of New York Homeopathic Medical College and Flower Hospital in 1872, died at his home in Somerville, January 9, 1926, aged 80. He was born at Dexter, Me., November 25, 1845, and was educated at Colby University before beginning medical studies in New York. He practised in Maine for three years and then settled in Somerville. He was medical examiner for Paul Revere Lodge of Odd Fellows, Somerville, and is survived by his widow and an adopted daughter.

BURISCH—DR. JOHN LIVINGSTON BURISCH, a Fellow of the Massachusetts Medical Society, died at the Worcester City Hospital following a cerebral hemorrhage, January 13, 1926.

Dr. Burisch entered Worcester City Hospital as an interne on June 30, 1923, and left to take up his private practice in that city on January 1 of last year. He attended Yale for two years, later transferring to Harvard Medical School and graduating in 1923. He was a member of the staff of Fairlawn and Louis Pasteur hospitals, of the Worcester District Medical Society, of the Phi Beta Kappa Fraternity, and a lieutenant in the Medical Reserve Corps.

He leaves a father, Julius Burisch of Elizabeth, N. J., and a sister, Mrs. Anna Dreyer of Union, N. J.

OLIN—DR. FRANCIS HENRY OLIN, a Fellow of the Massachusetts Medical Society, died at his home in Southbridge of pneumonia, January 15, 1926, at the age of 70.

He was born in Falls Village, Conn., and was graduated at the University of Michigan Medical School in 1881.

He began practising medicine in Woodstock, Conn., but moved to Southbridge 40 years ago. Besides his medical activities Dr. Olin was much interested in horses and the turf, and numbered among his friends most of the prominent horsemen of New England. He owned many trotters.

OBITUARY

RESOLUTIONS ON THE DEATH OF JOHN TAYLOR BOTTOMLEY, M.D.

Carney Hospital
Under the Direction
of the
Sisters of Charity of St. Vincent De Paul

South Boston, Mass., January 6, 1926

It was with extreme regret that we, the members of the Governing Board of the Carney Hospital, were informed of the sudden death of our highly valued fellow member:

John Taylor Bottomley, M.D.
who died December 17, 1925
Surgeon to the Hospital 1903-1910
Surgeon-in-chief 1910-1925
Associate in Surgery Harvard University Graduate School of Medicine
A member of numerous Surgical Societies and Associations
Consulting Surgeon to many New England Hospitals

Whereas, a life spent as an invaluable worker in the interest of the Carney Hospital, the advancement of surgery and assistance to the poor and suffering is at an end.

Dr. Bottomley's qualifications and application to duty were unusual. Possessed of a rugged constitution for many years, inspired by and keenly interested in everything that aided in the advancement of his chosen and loved profession, he toiled unceasingly and went near and far to aid those affected with illness and suffering.

The Carney Hospital has suffered a great loss, and it is the wish of the Governing Board and Staff that this expression of sorrow and sympathy be sent to Dr. Bottomley's family and spread on the official records of this institution.

FREDERICK W. JOHNSON, M.D.,
DANIEL F. MAHONEY, M.D.,
For the Governing Board.

CORRESPONDENCE

The Journal of the American Medical Association
January 12, 1926.

Dr. W. L. Burrage, Secretary,
Massachusetts Medical Society,
182 Walnut Street, Brookline, Mass.

Dear Doctor Burrage:

You are probably aware of the fact that Bernarr Macfadden is sending "lecturers" and exhibitors over the country giving a series of lectures on physical culture before local civic clubs. In some cases they have even persuaded the school authorities to permit the use of the public schools for this purpose.

When they attempted to do this in Richmond, Virginia, the State Health Commissioner, Dr. Ennion G. Williams, immediately got in touch with the American Medical Association and asked for such material as we had published on Macfadden so that he might put it in the hands of the officers of the civic organizations who had been approached by the Macfadden advance agents. He was sent pages from those issues of *Hygeia* that carried articles on this subject and was able with these to head off the Macfadden scheme as the Rotary, Kiwanis, Lions and other civic clubs cancelled the "lectures."

We now have the Macfadden material in reprint form, and we are enclosing one of the reprints. May we suggest that when the *Physical Culture* concern attempts to impose upon people of your State in this way that the local health officer be urged to get our reprints to put in the hands of the officials of the various clubs and other organizations through which Macfadden tries to work?

Very sincerely yours,
THE JOURNAL A. M. A.,
Arthur J. Cramp,
Bureau of Investigation.

REPLY

January 14, 1926.

Arthur J. Cramp, M.D.,
Bureau of Investigation,
American Medical Association.

Dear Doctor:

Thank you for sending us your letter of January 12, as to Bernarr Macfadden and the inclosure of pages from *Hygeia*. I am sending them to our President by this mail. We have been pestered in the past by Macfadden as well as by others who wish to entertain the Massachusetts Medical Society. In addition there are always those who wish to get their pet schemes indorsed by our society. Advertising has reached a high pitch of efficiency in these days, if it is efficiency to make us plough through forty or fifty pages of a newspaper to extract the news items from among the multitude of advertisements. The *Saturday Evening Post*, with its 160 pages, weighs nearly three pounds and is a book, under the classification of librarians, having more than 150 pages. Its readers must hunt through all the pages to follow the text of a story, and that they may see all the advertisements. We are approaching the day when men will wear hats with the names of the makers on the outside rather than on the inside. If the maker's name could be printed across the shoulders of a coat what splendid advertising it would be. The progressive advertisers look to that as the next move in publicity. Here's strength to your right arm in smiting the unworthy advertisers who attack the medical profession.

Sincerely yours,
W. L. BURRAGE,
Secretary.

THE MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH

DISEASES REPORTED FOR THE WEEK ENDING JANUARY 9, 1926

Anterior poliomyelitis	2	Pellagra	1
Chickenpox	280	Pneumonia, lobar	234
Diphtheria	100	Scarlet fever	295
Dog-bite requiring anti-rabic treatment	3	Septic sore throat	1
		Syphilis	22
Encephalitis lethargica	1	Suppurative conjunctivitis	15
Epidemic cerebrospinal meningitis	4	Tetanus	1
		Trachoma	2
German measles	59	Tuberculosis, pulmonary	123
Gonorrhea	76	Tuberculosis, other forms	20
Hookworm	1		
Influenza	17	Tuberculosis, hilum	6
Measles	1,651	Typhoid fever	5
Mumps	71	Whooping cough	393
Ophthalmia neonatorum	18		

CONNECTICUT DEPARTMENT OF HEALTH

MORBIDITY REPORT FOR THE WEEK ENDING JANUARY 9, 1926

Diphtheria	49	German measles	5
Last week	40	Influenza	9
Scarlet fever	71	Mumps	9
Last week	68	Pneumonia, lobar	81
Whooping cough	60	Septic sore throat	2
Last week	58	Tuberculosis, pulmonary	45
Measles	562		
Last week	283	Tuberculosis, other forms	9
Typhoid fever	3		
Last week	0	Gonorrhea	13
Bronchopneumonia	54	Syphilis	19
Chickenpox	113	Number of diphtheria bacilli carriers reported is	12
Conjunctivitis inf.	20		
Encephalitis epidemic	1		

NEWS ITEMS

COUNCIL ON PHYSICAL THERAPY—The House of Delegates, at the Atlantic City Session, authorized the establishment of a Council on Physical Therapy and instructed the Board of Trustees to select the personnel. The following appointments as members of this new Council were made by the Board of Trustees at its meeting in September:

Dr. W. T. Bovie, 695 Huntington Avenue, Boston.
Prof. Arthur Compton, University of Chicago, Chicago.
Dr. Ralph Pemberton, 2120 Sansom Street, Philadelphia.
Dr. Harry E. Mock, 122 South Michigan Boulevard, Chicago.
Dr. Walter B. Cannon, Harvard Medical School, Boston.
Dr. A. S. Warthin, University of Michigan, Ann Arbor.
Dr. Francis Carter Wood, 1145 Amsterdam Avenue, New York.
Dr. A. U. Desjardins, Mayo Clinic, Rochester, Minn.
Dr. George Miller MacKee, 170 West Fifty-ninth Street, New York.

The Council on Physical Therapy held its first meeting in Chicago in October, at which organization was effected and plans of procedure considered. It is the purpose of this Council "to investigate and report on the value and merits" of mechanical apparatus and contrivances—electrical and others—that are being offered to physicians and hospitals for use in the treatment of disease.

There is work of importance to be done in this field. The character and scientific standing of the personnel of the Council give full assurance that its work will be well done and that benefits will accrue to all who are concerned.

NEW GLASS PERMEABLE TO ULTRA-VIOLET RAYS—Two Austrian chemists, Fritz Pollak and Kurz Ripper, report that they have developed a new glass with a degree of permeability to ultra-violet and ultra-red rays even greater than that of flint glass. The new glass, which is called "pollopas," is elastic, has a wide refractive range, is about half the weight of window glass, can be worked on a turner's lathe, filed, polished, and planed, and can easily be dyed according to scientific standards with dyes adjusted to varying wave lengths.—*United States Children's Bureau.*

DR. ERWIN RUDOLPH SCHMIDT, of the staff of the Augustana Hospital, has been appointed professor of surgery at the University of Wisconsin and surgeon of the Wisconsin General Hospital, to take the place of Dr. Carl A. Hedblom, who recently resigned to accept a similar position at the University of Illinois.

SIR RONALD ROSS, director of the new Ross Institute of Tropical Diseases, left for Ceylon on December 11. His journey is being undertaken at the invitation of the Ceylon Association and he will investigate conditions in the island from the point of view of malaria control.

APPOINTMENTS AT THE HARVARD MEDICAL SCHOOL—At a meeting of the President and Fellows of Harvard College in Boston, November 9, 1925, it was voted to make the following appointments:

December 1, 1925—September 1, 1926: Vernon Percy Thompson, Teaching Fellow in Orthopedic Surgery.

November 1, 1925—September 1, 1926: Kenneth Metcalf, Assistant in Pediatrics.

For one year from September 1, 1925: Prodromos Nicholas Papas, Assistant in Genito-Urinary Surgery; George McLean Lawson, Research Fellow in Bacteriology; Mortimer Louis Anson, David Bruce Dill and Alfred Ezra Mirsky, Research Fellows in Physical Chemistry; Victor Hugh Norris, Robert Verhoogen and Soma Weiss, Research Fellows in Medicine.

Voted to make the following changes of title:

Nathaniel Robert Mason from Instructor in Obstetrics and Assistant in Gynecology to Instructor in Obstetrics and in Gynecology.

Alpha Reuben Sawyer from Assistant to Instructor in Genito-Urinary Surgery.

NOTICES

AMERICAN BOARD OF OTOLARYNGOLOGY

AN examination will be held by the American Board of Otolaryngology in Dallas, Texas, on Monday, April 19, 1926, and in San Francisco, California, on Tuesday, April 27, 1926.

Application should be made to the Secretary, Dr. H. W. Loeb, 1402 South Grand Boulevard, St. Louis, Missouri.

UNITED STATES CIVIL SERVICE EXAMINATION

The United States Civil Service Commission announces the following open competitive examination:

Occupational Therapy Aide, $1680
Occupational Therapy Pupil Aide, $1140

Applications for these positions will be rated as received until June 30, 1926. The examinations are to fill vacancies in the Veterans' Bureau throughout the United States.

The entrance salaries are shown above. After the probational period of six months required by the civil service act and rules, advancement in pay may be made without change in assignment up to $2040 a year for occupational therapy aide, and up to $1500 a year for occupational therapy pupil aide. Promotion from the lower to the higher grade may be made in accordance with the civil service rules as vacancies occur.

Full information and application blanks may be obtained from the United States Civil Service Commission, Washington, D. C., or the secretary of the board of United States Civil Service Examiners at the postoffice or custom house, any city.

REPORTS AND NOTICES OF MEETINGS

THE PHYSIOLOGICAL CONFERENCE

THE next meeting of the Physiological Conferences will be held in the Bowditch Library of the Harvard Medical School on Monday, January 25, at 4 o'clock. Dr. Frank Fremont-Smith will speak on "The Effect of Concentration of Protein in the Plasma on the Distribution of Chloride between Plasma and Cerebral Spinal Fluid."

HARVARD MEDICAL SOCIETY

THE next regular meeting of the Harvard Medical Society will be held as usual in the amphitheatre of the Peter Bent Brigham Hos-

pital, Jan. 26, 1926, at 8:15 p. m. The program follows:—

1. Demonstration of cases.
2. Irregularities of the Heart Action, Demonstrated by Motion Pictures of the Heart of Dog and Turtle—Dr. Samuel W. Lambert, New York City.

All members of the Medical Profession, Medical Students and Nurses are invited.

S. A. LEVINE, M.D., *Secretary.*

MASSACHUSETTS GENERAL HOSPITAL

CLINICAL MEETING

A Clinical Meeting will be held in the Administration Building, Massachusetts General Hopital, Fruit Street, on Thursday, January 21, 1926, at 8:15 P. M.

PROGRAM

1. Presentation of Cases.
2. Some of the Newer Compounds used in Industry—Dr. Alice L. Hamilton.
3. Border Lines of Industrial Medicine—Dr. David L. Edsall.

A cordial invitation to attend these meetings is extended to physicians, medical students and nurses.

COMMITTEE ON HOSPITAL MEETINGS.

PROGRAM OF THE COMBINED MEETING OF THE NEW YORK, PHILADELPHIA AND NEW ENGLAND X-RAY SOCIETIES AT THE HOTEL SOMERSET, 400 COMMONWEALTH AVENUE, BOSTON

FRIDAY AND SATURDAY, JANUARY 29 AND 30, 1926

FRIDAY, JANUARY 29

CLINICS AND HOSPITAL DEMONSTRATIONS

Boston City Hospital

10-12 a. m.

Sub-Diaphragmatic Abscess—Dr. O'Brien.
Gastro-Intestinal Studies—Dr. Ritvo.
Oesophageal Diseases—Dr. N. Butler.
Variations in Response to Treatment of Glandular Enlargement—Dr. Habbe.
Treatment of Metastatic Malignancy—Dr. Gerber.

Massachusetts General Hospital

10-12 a. m.

Gall-Bladder Disease—Dr. John D. Camp.
Some of the Causes of Dysphagia from an X-Ray Standpoint—Dr. A. S. MacMillan.
Chest Technique—Dr. G. W. Holmes.
Malignant Lymphoma of the Sternum—Dr. R. Dresser.
Cases of Uterine Bleeding—Dr. J. V. Meigs.
Case Reports from the X-Ray Treatment Clinic—Dr. Robert Reeves.
Dermatological Clinic—Dr. C. Guy Lane.

Huntington Memorial Hospital

1.30-2.30 p. m.

Cases Treated by Constant Voltage X-Ray.
Demonstration of "Duane Ionization Chamber."
Demonstration of Radium Emanation Apparatus.

Peter Bent Brigham Hospital

2.30-3.30 p. m.

Demonstration of Cases.
Clinic—Dr. H. A. Christian, Professor of Medicine, Harvard Medical School.
Clinic—Dr. Harvey Cushing, Professor of Surgery, Harvard Medical School.

Warren Museum, Harvard Medical School

3.30-5.00 p. m.

"Bone Tumors." Demonstration of Specimens and X-Ray Films—Dr. E. A. Codman, Boston, Dr. J. C. Bloodgood, Baltimore.

FRIDAY EVENING

Banquet—Hotel Somerset

7.30 p. m.

"Bone Tumors"—Dr. Joseph C. Bloodgood, Baltimore, Md. Discussion by Dr. F. B. Mallory, Boston, and Dr. E. A. Codman, Boston.

HOTEL SOMERSET

SATURDAY MORNING, JANUARY 30

9.00 Grant Cell Tumor—Especial Reference to X-Ray Diagnosis—Dr. G. W. Holmes, Boston.

9.30 Dental Roentgenology—Dr. Kurt Thoma, Boston. Discussion by Dr. A. H. Crosbie, Boston.

10.00 End Results of Five Hundred Cases Studied by the "Graham-Cole Method"—Dr. M. C. Sosman, Boston. Discussion by Dr. P. B. Davidson, Boston.

1.30 Hilum Tuberculosis—Dr. H. D. Chadwick, Superintendent, Westfield State Sanatorium. Discussion by Dr. Cleaveland Floyd, Boston.

11.00 Intra-tracheal Injections of Lipiodol—Dr. A. H. Pirie, Montreal. Discussion by Dr. W. F. Manges and Dr. L. G. Cole.

11.30 Lympho-blastoma; Age and Sex Incidence, Duration of Disease, and Some Abdominal Manifestations—Dr. George R. Minot and Dr. Raphael Isaacs.

SATURDAY AFTERNOON

2.00 Joint Tuberculosis—Dr. R. K. Ghormley, Boston.

2.03 Thymus—Dr. A. S. MacMillan, Boston. Discussion by Dr. C. W. Perkins, New York.

3.00 Industrial Roentgenology—Dr. Francis D. Donoghue, Medical Advisor to the Massachusetts Industrial Accident Board. Discussion by Dr. B. C. Darling, New York.

3.30 Some "Normal Abnormalities" in Bones; Their Importance in Industrial Accident Work—Dr. John D. Adams, Boston.

4.00 Further Observations on the X-Ray Treatment of Bronchial Asthma and Chronic Bronchitis—Dr. I. Gerber, Boston. Discussion by Dr. E. W. Smith, Boston.

4.30 Radiological Appearance of Calcified Bursae Treated by Radiotherapy—Dr. Frank B. Granger, Boston. Discussion by Dr. E. A. Codman, Boston.

5.00 Demonstration of Interesting Slides and Films.

All sessions, except the clinics, will be held at the Hotel Somerset, 400 Commonwealth Avenue, Boston.

Make reservations direct with the hotel.

The Brigham Hospital, Warren Museum (Harvard Medical School) and the Huntington Hospital are situated close together between Huntington Avenue and Longwood Avenue.

The Boston City Hospital is at the corner of Harrison and Massachusetts Avenues, one block from the Northampton Street elevated station.

The Massachusetts General Hospital is on Fruit Street in the West End—about ten minutes' walk from the North Station.

Those intending to attend any part of the meeting and the banquet will kindly notify Dr. C. W. Blackett, 35 Bay State Road, Boston, Mass.

Opportunity, however, will be available to register and obtain banquet tickets Friday morning at the hotel. The banquet tickets will be three dollars. Any one interested in Roentgenology is welcome. Informal dress.

OFFICERS OF THE NEW ENGLAND ROENTGEN RAY SOCIETY

President, L. B. Morrison, M.D.; Vice-President, A. C. Henblen, M.D.; Secretary-Treasurer, C. W. Blackett, M.D., 35 Bay State Road, Boston, Mass.

INTERNATIONAL MEETING OF THE NATIONAL TUBERCULOSIS ASSOCIATION

PLANS for the international meetings of the National Tuberculosis Association and the International Union against Tuberculosis in Washington next fall are rapidly being perfected. The dates of the International Union meeting are September 30, October 1 and 2. The international meeting of the National Tuberculosis Association will follow immediately after, beginning on Monday, October 4, and extending through Thursday noon, October 7.

A committee of the National Tuberculosis Association on the program and arrangements for the international meeting has been appointed. The members of the committee are as follows: Dr. Charles J. Hatfield, Chairman, Dr. James Alexander Miller, Dr. William Charles White, Mr. Homer Folks, Dr. W. Jarvis Barlow, Dr. Gerald B. Webb, Dr. H. R. M. Landis, Dr. E. R. Baldwin, Dr. Hoyt E. Dearholt, Dr. Allen K. Krause, and Mrs. T. B Sachs, with Dr. Theobald Smith and Dr. L. R. Williams as members ex-officio. Two meetings of the committee have been held and other meetings are planned in the near future.

SOCIETY MEETINGS

DISTRICT MEDICAL SOCIETIES

Essex South District Medical Society

Wednesday, February 3—At 7 P. M. Hawthorne Hotel, Salem. Dr. Walter Timme, New York. Subject to be announced.

Wednesday, March 3—Lynn Hospital. Clinic, 5 P. M. Dinner, 7 P. M. Dr. Charles E. Mongan, Somerville, "Some Problems of Present-Day Practice."

Thursday, May 6—Censors meet at Salem Hospital, 3:30 P. M.

Tuesday, May 11—The Tavern, Gloucester. Annual meeting. Speaker to be announced.

Essex North District Medical Society

May 5, 1926—The annual meeting at the Anna Jaques Hospital, Newburyport.

Middlesex East District Society

February 10—At the Harvard Club. Address by Dr. William F. Boos; subject, "Industrial Poisoning."

April 14—At the Harvard Club at 6:30 P. M. Address by Dr. William E. Ladd, subject to be announced later.

May—Annual meeting, Colonial Inn, North Reading. Subject and speaker to be announced.

Suffolk District Medical Society

January 27—At 8:15 P. M. Combined meeting with Boston Medical Library. "Medical Experience of an Explorer," Dr. J. Hamilton Rice.

February 24—At 8:15 P. M. Surgical Section. "Post-operative Care of Surgical Cases," Dr. Dean Lewis, Chicago. "Surgical Convalescence," by Dr. John Bryant.

March 31—At 8:15 P. M. Medical Section. "Some Experiments in Group Physical Examination," Dr. Roger I. Lee.

April 28—At 8:15 P. M. Annual meeting. Election of officers. "Some Diagnostic, Prognostic and Therapeutic Aspects of Disorders of the Blood," Drs. George R. Minot, Cyrus C. Sturgis and Raphael Isaacs.

Notices of meetings must reach the JOURNAL office on the Friday preceding the date of issue in which they are to appear.

BOOK REVIEW

Synopsis of Midwifery and Gynaecology. By ALECK W. BOURNE, B.A., M.B., B.Ch., F.R.C.S. New York: William Wood and Company. 1925.

Two previous editions of this convenient syllabus of obstetrics and gynaecology have been favorably reviewed in the JOURNAL. This third edition has been revised to incorporate accepted advances made since 1921, and has been materially enlarged by the addition of a section on gynaecology. The treatment of the two subjects as aspects of the same great branch of medicine is a recognition altogether to be commended. This manual should be of equal value to students, practitioners and teachers.